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ASTHENOLOGY:

OR,

THE ART OF PRESERVING

FEEBLE LIFE;

AND OF SUPPORTING THE CONSTITUTION UNDER THE INFLUENCE

OF

INCURABLE DISEASES.

BY

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TRANSLATED FROM THE GERMAN

BY

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PREFACE.

A TREATISE on Aſthenology, at the preſent period, may not be improper, either in a moral or phyſical view, eſpecially as the evil (I here ſpeak of it in a phyſical ſenſe) has often made ſuch progreſs, that nothing can be done but to prevent it from acquiring a ſuperiority, and to prolong, at leaſt for a certain period, that life which we are not able to maintain. Such an art, whether we call it aſtheno-macrobiotic or aſthenocomic, the art of prolonging life, or the art of maintaining feeble life, muſt, under theſe circumſtances, be highly acceptable.

This work, therefore, the reſult of ſeveral years ſtudy, is deſtined to ſupply in ſome meaſure the want occaſioned by the evil to which I allude.

Such a work, partly on account of the ſtate of the art, and partly on account of the author's ſituation, can be nothing but an eſſay, and a firſt eſſay; as hitherto we have had only individual fragments on the art of maintaining feeble life; for no one has ever yet written on the ſubject in its full extent.

As

As the author is well aware what the public require, and what they have a right to expect in a work of this kind, he has endeavoured, as far as his knowledge and his talents would allow, to gratify their wishes. His situation, however, excluded him from that leisure necessary to give it connection, and to reduce it into a proper systematic form.

Those acquainted with the business of a physician, must know how many impediments may come in the way to prevent him from fulfilling the just expectation of his readers. A theorist, in the enjoyment of leisure, might have carried it to greater perfection; but whether such a work may not have gained essential advantages in the hands of a practical physician, must be left to the public to determine.

In the present period, it seems to be criminal for a man to pursue his own course, and not to range himself on the side of some party*; but it may be asked whether this intolerance and despotism over the thoughts, instead of promoting the cause of science, does not rather subject the mind to the most slavish trammels. The author professes the utmost respect for the Scots system, which is a work of great genius; and he cannot help admiring, in particular, the theoretic part†; but he is neither a Brunonian nor an Anti-

* It is distressing to read, in many of our critical journals, the severe, and in part insulting attacks made against men of the greatest merit, where persons and things are confounded. To praise or to condemn Brown is equally dangerous.

† After I had completed the first and second part of this work, I obtained a copy of Roschlaub's Pathogeny, of which two volumes have appeared; and it gives me pleasure to observe that he has been conducted, though by a different way, to a great many results which coincide with mine.

Anti-Brunonian, becauſe he ſees no neceſſity for adopting either ſide, unleſs he choſe to belie his own conviction. He found ſomething good in the work throughout; and he conſidered it his duty to make uſe of it.

Had this work been kept back ten or twenty years, it might have obtained a quite different form. It might have gained in ſome reſpects, and loſt in others. But *ars longa vita brevis*; the author therefore thought proper to give it to the public ſuch as it is. He wrote for his own inſtruction; and he now ſubmits the reſult of his labour to the unprejudiced judgment of his cotemporaries.

If the theoretic part ſhould appear to ſome readers to contain little intereſting, they will perhaps find more ſatisfaction in the ſecond or practical part.

The whole will be concluded by a third part, containing the treatment of ſome incurable or obſtinate diſeaſes, which relate to the maintaining of feeble life.

C. A. STRUVE.

Gorlitz, Dec. 1798.

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2. *Stimulants.*

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543. Heat.
544. Immoderate ſweating.
545. Thirſt.
546. Vomiting.
547. Diarrhæa.
548. Hemmorhages.
549. Shortneſs of breath.
550. Pain in making water.
551. Cramp.

INTRODUCTION.

§ 1.

THE deſire of life is not extinguiſhed by the utmoſt degree of human miſery; ſufferings continued for years, diſeaſes, and pain. It continually ſupports itſelf by hope; and, though often deceived in the expectation of relief, ſtill flatters itſelf that the beſt conſequences will enſue. The wiſh for continuing our exiſtence is kept alive amidſt the ſevereſt oppreſſion of poverty, if only a diſtant ray of hope ſmile upon us. A diſguſt of life is rather a tranſitory ſtate, from which the child of misfortune emerges as ſoon as a few painleſs moments reſtore him to the uſe of reaſon.

§ 2.

Since the attachment to life is ſo ſtrong, the means of prolonging its exiſtence have, at all times, been received by mankind with the utmoſt welcome; though they have not always been pleaſed with the ſacrifices neceſſary for this important object.

§ 3.

The grounds for prolonging life, and guarding againſt the exiſtence of diſeaſe, muſt be laid, during the period of ſound health, by a ſuitable conduct. This is often neglected; and man, by diſſipation,

deviations from thoſe rules neceſſary to promote health, or inattention, paves the way for a melancholy and wretched exiſtence; ſo that a great part of his life is a chronic diſeaſe. By theſe means his days are ſhortened, and the frail thread of life is in danger of being broken by the firſt cauſe that occurs. The ſick, ſickly, or feeble patient, beholds death approaching, yet wiſhes—who can blame him?—notwithſtanding his ſufferings, to ſee it removed from him as far as poſſible; and is ſtill attached to an exiſtence which coſts him ſo many moments of bitterneſs. The wiſh that the boundary of life may be extended to the greateſt poſſible diſtance, is connected with the ſweeteſt hope, which inſinuates itſelf ſo readily into the heart, that his diſeaſe will in time be removed, and that he may be reſtored to the full enjoyment of health. How acceptable to ſuch a child of misfortune muſt be the means of prolonging feeble life!

§ 4.

Theſe means are the ſubject of the preſent work, which comprehends, under the term ASTHENOLOGY, the ſtate of valetudinarians, and the method of maintaining feeble life.

§ 5.

ASTHENOLOGY, in regard to its theory, and the application of it as an art to maintain feeble life, is diſtinguiſhed not only from the macrobiotic art, or that of prolonging human life, of which it forms a ſubordinate part *(aſthenomacrobiotic)*, but alſo from the antiaſthenic art of healing, or *aſthenotherapia*, which is employed in removing weakneſs, and reſtoring the loſt powers and health. The art of maintaining feeble

§ life

life leaves to theſe the direct ſtrengthening method; and has for its object merely to preſerve and prolong the exiſtence. It extends its aim farther than the direct art of healing, and is therefore active, when the common phyſician deſerts the patient, and declares his malady to be incurable. In regard to its object, the maintaining and prolonging life in the aſthenic ſtate, it comes within the boundaries of both ſciences, and endeavours to maintain feeble life, reſcued from apparent death. It tries alſo how far it is poſſible to operate a direct cure in caſes of aſthenia; and when no radical method of cure is applicable, relieves by the palliative method the moſt urgent ſymptoms, and exerts itſelf to prolong, for a certain period, that life which it is not able to preſerve.

§ 6.

In common language ſomething of the like kind is well known. We often hear that the phyſician has relieved the patient, or that the application of certain means will retard the progreſs of death. People, in general, are pleaſed alſo with that phyſician, who, after declaring his patient is incurable, ſays that he will now do ſomething to preſerve him in life a little longer. All this is true. Stoll ſays, ſpeaking of the treatment of certain malignant fevers: "It is fortunate enough if the diſeaſe be not rendered worſe, and if means be found to let it linger itſelf away *." This indeed does not agree with the practice of many modiſh phyſicians, who, believing themſelves maſters over nature, inceſſantly attack their patient with the utmoſt violence, till they at length hurry him to his grave.

* *Auſzug aus Stoll Heilungſmethode.* Part II. p. 304.

§ 7.

No author has ever yet treated ſyſtematically on the means neceſſary for maintaining feeble life. Except ſingle eſſays, we have no work of the kind *; and yet this art deſerves as much as the macrobiotic to be treated in a ſcientific manner.

§ 8.

Few inſtances of aſthenic life prolonged by the application of proper means occur to us, though caſes, where perſons, notwithſtanding the utmoſt weakneſs and conſumption, live a long time, and where others dying, lie ſeveral days in the feebleneſs of death, are not uncommon. The inſtance of Democritus, who in order that he might ſee the olympic games prolonged his life two days, by the vapour of hot bread, is very remarkable.

Herodicus, who obliged his patients to exerciſe themſelves by walking; to ſubmit their bodies to friction, and to overcome diſeaſe by exerting the muſcular powers, had the good fortune to prolong many years, by his method, the lives of ſeveral valetudinarians *.

In general, however, men expect too much from nature, and dream of growing young, inſtead of being contented with a reſpite from death, and with prolonging their life for a certain period.

* In Hecker's *Handbuch der Allgm. Heilkunde*, we find only in four paragraphs: LVIII. *In uncurable diſeaſes, how to maintain the ſtill remaining feeble life.* The author ſays, in the preface, that the ſubject of this chapter has not been treated in any elementary work on medicine. Stubbendorf. *Diſſert. de vita in morbis prorſus inſanabilibus praelongenda.* Goett. 1781. 4 I have never ſeen.

† Hufeland's Art of Prolonging Life, Engliſh edition, p. 4.

§ 9. The

§ 9.

The GEROCOMIC of GALEN, the healing art as applicable to old age, comprehends a part of the art of maintaining feeble life. The object of it is to counteract the increasing hardness and rigidity of the vessels; to promote nourishment, and to favour, as far as possible, the restoration of the lost powers. Collections, highly valuable in regard to this art, may be found in Lord BACON's treatise on life and death; and particularly in HUFELAND's classic work on *Prolonging human Life*.

To this belongs also the ANATHREPSIS or ANALEPTIC (ἀναθρεπτικὴ ἀναληπτικὴ) of GALEN: The art of restoring debilitated patients, and of curing diseases by nourishing and strengthening means.

§ 10.

ASTHENOLOGY comprehends in the theoretic part, the origin and causes of the asthenic state of human life; both in regard to disposition for disease, and to diseases themselves; and is founded on the vital principle. In the practical part it contains the means to be employed for maintaining life in the asthenic state, whether the diseases be curable or have been declared incurable by the physician. It contents itself with prolonging human existence to as extensive a period as possible, and is the direct enemy of death.

The first part may be properly comprehended under the term ASTHENOGENY: The doctrine of the causes of Feebleness. The second contains the practical application of this doctrine.

§ 11.

The idea of FEEBLENESS is relative. In general we mean by feebleneſs, when the vital operations are not performed in a proper manner: when the mind is deprived of its cheerfulneſs and vivacity; when the limbs have loſt their agility; when the powers of the digeſtive faculty have become weak; &c. But ſuch ſymptoms are obſerved where life is in full vigour; in the ſoundeſt and moſt robuſt men, after fatigue or exceſſive labour.

The idea of Aſthenia may be deduced from comparing it with the idea of ſtrength: after this compariſon, ſome certain concluſion may be formed reſpecting it in regard to ſtate and circumſtances; individual bodily conſtitution and external influence. The idea of the vital principle muſt be our guide. (§ 97.)

§ 12.

The doctrine of the vital power, or, to ſpeak more correctly, of the vital principle, is the baſis of the art of maintaining feeble life (*Aſthenomacrobiotic.*) Many important reſults are to be expected from ſtudying the modern reſearches on this ſubject; and aſthenology is particularly indebted to the Brunonian ſyſtem, which has elucidated theſe important reſearches—a ſyſtem from which ſo many reflecting minds of the preſent period have derived much light.* No period, indeed, has produced ſo many helps as the preſent,

* That this is meant to be underſtood conditionally, will appear from various paſſages in the following work. The miſchief which ariſes in practice from confounding Brown's *Sthenia* and *Aſthenia*, is evident.

to

to promote the improvement of the healing art; and never were ſuch noble proſpects opened before it. The idea that *man is an organized animated being, both as a whole and in ſingle parts*, which is now applied more than ever to the healing art, when purified from ſtahleaniſm as well as from coarſe materialiſm, conducts to the moſt beneficial reſults. We can apply a ſuitable remedy to human infirmities, only when we have become thoroughly acquainted with man. Our expectation is ſtill farther raiſed when we place together the reſearches of an Arnemann, Rooſe, Hufeland, Brandis, von Humbold, reſpecting the vital power or the vital principle, and Reil's reſpecting organization; compare them with the Scotch ſyſtem, and, under the guidance of a Röſchlaub, who has commented on it with ſo much acuteneſs, deduce from it uſeful reſults.

§ 13.

The idea of the CURABLENESS OR INCURABLENESS of a diſeaſe, is, in general, very indefinite, and requires great limitation. Many diſeaſes which by phyſicians are commonly declared to be incurable, becauſe they know no farther remedies for them, or becauſe the remedies which they imagine effectual, do not anſwer their expectation, are often cured by the judicious phyſician, who confides in nature. The ancients accounted various diſeaſes, ſuch as dropſy of the head, lameneſs of the lower limbs, diſtorted feet &c. incurable; of which, however, our more improved art can exhibit, at leaſt, ſingle inſtances of cure. As long as the principal organs of life have not materially ſuffered, a diſeaſe cannot be pronounced deſperate. A great deal here depends on the nature of the injury

which theſe organs have ſuſtained. The moſt incurable maladies are thoſe which ariſe from a mechanical waſting of the internal organs, always increaſing, ſuch as ſuppuration of the lungs in *pthiſis purulenta*. But ſometimes conſiderable parts of a principal organ of life, ſuch as the brain or lungs, may be injured, and life ſtill continue a long time; while, in other caſes, it maintains itſelf for a much ſhorter period, or diſappears in a moment, though the leaſt apparent injury does not exiſt in any of the organs. Something alſo depends on the loſs of vital ſuſceptibility in an organ: the greater this loſs, the ſhorter will be the duration of life. Lameneſs affords us an inſtance in individual parts of what we obſerve in the general organization, in many caſes of death. The real loſs of vital ſuſceptibility is incurable; if complete it is death; if incomplete it is diſeaſe: but diſeaſe incurable.

It is ſometimes difficult to diſtinguiſh the actual loſs of the vital principle from mere oppreſſion of its activity. People, therefore, ſhould not be too raſh to pronounce a diſeaſe incurable. There is reaſon to hope, that by the progreſſive improvement of ſcience, the number of the incurable diſeaſes, as they are called, which hitherto, to the great misfortune of ſuffering humanity, have exiſted rather in idea than in reality, will more and more decreaſe.

§ 14.

There are ſome diſeaſes in which the whole care of the phyſician muſt be to check the progreſs of the evil: to maintain, and, if poſſible, to ſpare the few powers that are left, when no direct method of healing can be employed, by which means he acts rather as

an

an obſerver of nature than a phyſician. Every thing almoſt in theſe diſeaſes depends on a ſuitable regimen; and, at the ſame time, a continually uniform progreſs in the whole mode of treatment muſt be obſerved, as each deviation from it gives reaſon to apprehend a relapſe; an increaſe or unfortunate termination of the malady. In ſuch caſes the moſt cautious application of the means of healing is required. Sometimes the phyſician proceeds with more ſafety when he gives no medicines, and only watches the critical movements of nature; but ſometimes by the uninterrupted uſe of ſtimulants he muſt ward off death until the powers recover their proper tone. Theſe are the diſeaſes in which the art of maintaining feeble life may be employed in its whole extent.

§ 15.

Too much muſt not be aſcribed to nature. We muſt not expect from her any thing ſupernatural or miraculous; nor muſt we expect every thing from external applications, medicines or regimen. We muſt never depart from the idea of AN ANIMATED ORGANIZED BODY. In employing the art of maintaining feeble life, we muſt even not loſe ſight of the direct method of healing; nor abſtain from uſing medicines where neceſſary. There are certain caſes where the reſtoration of health requires external ſtimulants; and on ſuch occaſions to abſtain from applying a powerful remedy would be negative murder.

§ 16.

But, on the other hand, what advantages does not the art of maintaining feeble life ſecure to the phyſician? In following the rules of this art, he carefully guards

guards againſt every violent agitation which might break the tender vital thread, and employs no direct means of cure, when he is apprehenſive of thereby endangering the life of a human being. In this reſpect the empiric, who runs all hazards and either cures or kills, will often get before him; as fortune ſometimes favours the raſh and the preſumptuous. But it muſt give ſatisfaction to the real phyſician to reflect that he has done no hurt, in caſes in which he had no certain proſpect of doing ſervice *.

§. 17.

He who has particularly in view the preſervation of the life of a feeble patient will be a more careful obſerver of nature. Attentive to every criſis and variation of the diſeaſe, he will watch the moment when the application of a powerful medicine, that may preſerve life, is ſeaſonable; while the too active phyſician, very often, confounds the effects of a ſtimulating medicine with the mere effects of nature; and, amidſt his hurry and buſtle, overloooks the precious moment in which a capital blow might be ſtruck againſt the enemy. This method, the work of cool deliberation, mature reflection, and unprejudiced, careful obſervation, is employed by the greateſt phyſicians. Phyſicians of this deſcription, ſuch as a B. J. HOFFMANN and a GILBERT, have been particularly ſucceſsful in the cure of chronic diſeaſes. The field of the medical art requires a ſlow Fabius as well as an impetuous

* In his anguſtiis medici officium, quod parens medicinæ binis vocabulis: ωφελησ'ιν, η μη βλαπτειν (prodeſſe aut ſi id nequeat, non nocere) totam circumſcripſit, is probe defungetur, qui alteram ſolum ejus partem μη βλαπτειν, expleverit. Stoll rat. Med. i. 10.

Hannibal;

Hannibal; and it frequently happens that the former triumphs when he knows how to prolong the war, and often tires out a more powerful enemy. In the like manner, it frequently happens that the phyſician, if he particularly exerts himſelf to preſerve the exiſtence of his patient as long as poſſible, and notwithſtanding his feebleneſs to repel death day after day, at length overcomes the diſeaſe, and contrary to expectation reſtores him to welcome health. It is a very common obſervation, that a patient attacked by a ſevere diſeaſe will perhaps recover becauſe the diſeaſe is lingering. Art is ſometimes ſo fortunate as to conduct the patient paſt a certain fatal period, which is called throwing a bridge over the valley of death. A very remarkable inſtance of this, much in point, may be found in the firſt volume of Hufeland's *Eſſay for promoting Health and ſound Life* *. In the ſame manner as this was effected, in the caſe here quoted, by mental ſtimulants, it may be accompliſhed alſo on other organs, by other ſtimulants. Thus mortal paroxyſms of fever are averted by opium or cinchona †.

Nothing tends ſo much to ſecure to the phyſician the confidence of his patient as to exert himſelf to procure a reſpite for feeble life, when all others doubt of the poſſibility of maintaining it. This flattering hope draws cloſer the band between the phyſician and patient, which is certainly a moſt eſſential advantage to both. It is the phyſician's duty never to deſert his patient till he is fully convinced of his actual death. Till the complete departure of life there is ſtill a poſſibility of ſaving it, at leaſt in many

* Page 214. † Burſeri Inſtit. vol. i. 240.

caſes;

caſes; and even when this is impoſſible it is ſtill a duty to prolong it.

§ 19.

There is nothing ſo preſumptuous, if we will honeſtly confeſs the imperfection of our art even to effect the mere preſervation of human life, as to feed the chimerical idea of renovating age; reſtoring powers actually loſt, or of eternal youth. It is much more becoming the dignity of the modeſt phyſician, who knows the boundaries of his art, not to promiſe to patients, who have attained to a great degree of aſthenia, an unconditional cure; and thus to deceive unfortunate beings with a hope which has the appearance of inſulting mockery; but his duty as a phyſician, and his feelings as a man, require that he ſhould promiſe to do every thing in his power to preſerve them in life as long as poſſible, and by theſe means, perhaps, to diſcover a method of reſtoring them to complete health.

§ 20.

Thoſe acquainted with the value of human life, know the importance of a year, a day, and even an hour; and theſe when ſpent amidſt the full enjoyment of the vital functions, of how much importance to our whole exiſtence! what events, fertile in conſequences, depend often on one hour of our life! It is, therefore, an eternal and irreparable loſs, when not enjoyed as it ought. On the bed of death, an hour often determines the fate of whole families and ſtates. How many ſick die in greater peace, becauſe, by having lived an hour longer, they accompliſhed one of their moſt ardent wiſhes. With what anxiety do many

dying

dying fathers wiſh for ſuch an hour, becauſe they expect the arrival of an abſent ſon. How grateful is this hour to ſurviving friends, who have received from a dying man information reſpecting ſome important event of his life. Is any thing farther neceſſary to give importance to the art of prolonging feeble life?

§ 21.

In the preſent period, when the number of aſthenic diſeaſes is ſo conſiderable, this art muſt recommend itſelf; and indeed never was it ſo neceſſary both for the phyſician and the patient. This is the caſe in particular, among phyſicians of the firſt claſs, who have to ſtruggle againſt artificial as well as natural debilities. It too often happens that aſthenia exiſts to ſuch a degree among enervated people, weakened by their mode of life, that no hope is left of reſtoring their loſt health; much leſs of converting their encreaſing infirmities into ruſtic health and ſtrength; and that the higheſt triumph which the medical art can obtain, is to aſſiſt the gouty voluptuary, or the nervous lady of faſhion, to hold out for a couple of years longer; eſpecially when he has to counteract or overcome inceſſant irregularities and debilitating habits, which his patients will not abandon. How many phyſicians, by their ſituation, are obliged to acquire experience in this great art, and yet are blamed becauſe the artificial life which they procure to their exhauſted patients, for a number of years, comes at length to an end.

§ 22.

That we may be better able to comprehend the full value of the art of preſerving feeble life, I ſhall here take

take notice of ſome objections which may be made againſt it.

How void of enjoyment is a life ſpent amidſt ſo much miſery and pain, which render it like a continued diſeaſe. How often does the unfortunate wretch wiſh for death, and how many ſay that they would prefer a ſpeedy death to lingering ſickneſs. Is the preſervation and prolongation, therefore, of ſuch a wretched artificial exiſtence a benefit? Plato * alſo, where he relates the ſtory of Herodicus, condemns this invention; and aſſerts that diſeaſes which cannot be removed by medicine, the knife or cauteries, and whoſe endleſs effects can be prolonged only by regimen and exerciſe, require no phyſician; for death is better than ſuch an half exiſtence.

With the permiſſion of all philoſophers, philoſophaſters and non-philoſophers, I ſhall here offer the following, certainly not unphiloſophical, anſwer. Our life does not conſiſt in pure pleaſure and enjoyment. Sufferings are often neceſſary: diſeaſes ſecure health and ſtrengthen life. It is not he who merely enjoys that lives; but he alſo who ſuffers and endures with patience. Even under the preſſure of miſery, continued for years, there are ſometimes cheerful moments; and cuſtom, by blunting our ſenſations, makes ſome ſufferings ſupportable. Joy ariſes, therefore, ſometimes from the boſom of miſery. The ſufferer can find ſome relief for his torment by giving vent to tears. The wiſh for annihilation is gradually loſt under the continuance of miſery. The moſt melancholy and the moſt painful life is ſtill life, during which a man may diſcharge duties attended with important conſe-

* De Repub. Dialog. III.

quences

quences to himſelf as well as to others; and does not the hope of relief always remain till the total extinction of life? In a word, let us turn for a moment from theſe very learned and deep thinking men, and aſk the immenſe multitude of thoſe oppreſſed with age and bent by infirmity, whether they wiſh to procure a reſpite for their feeble and ſickly life? Methinks I hear them all with one voice loudly exclaim in the affirmative. Is it not the part therefore of the friend of humanity to endeavour to gratify their wiſhes?

But when the patient, tortured with inſupportable pain, invokes death, and when even a ſight of his miſery is more than thoſe around him can bear; when, according to every appearance, no relief is poſſible, and each ſucceeding hour encreaſes his ſuffering, is the art of the phyſician who prolongs this life of miſery, beneficial? What a ſtruggle between duty and compaſſion! Shall we pull the dagger from the wound and put an end with it to the ſufferer's life? When Epaminondas lay weltering in his gore, on the field of battle, he did not draw the dagger from his boſom till he heard that his army had conquered. A wounded man, writhing with the moſt dreadful torture, and ſtruggling with death, yet not expiring, was once brought to a certain phyſician. Soon after it was found that he had breathed his laſt. When the phyſician was aſked the reaſon of his ſudden deceaſe? he replied: 'Being convinced of the impoſſibility of ſaving the unhappy wretch, I haſtened his death by an operation.' What ſentiment of feeling did this phyſician follow?

§ 23. The

§ 23.

The requisites for the art of maintaining feeble life, deserve also to be mentioned.

1. An acquaintance with the nature of man; and particularly the study of the influence of the vital principle on the sound and diseased state.

2. An acquaintance with the healing art, in its whole extent.

3. A knowledge of the patient, his individual state and habit, in order to enable the physician to apply his knowledge of the general causes of Asthenia to particular cases.

4. A knowledge of the disease; its origin, its usual progress and its accidents, in order to avert approaching danger, if possible, and to lessen that which exists.

On the part of the physician, who endeavours to effect the maintenance of asthenic life, the requisites, besides the necessary knowledge, talents and address, are a high degree of acuteness and practical sagacity, and great attention to every thing that takes place in regard to his patient; presence of mind to enable him to recover from embarrassment in sudden accidents; great courage, perseverance and firmness, to prevent his patience from being exhausted by the many turns of the disease, unexpected incidents, and the peevishness of the patient; in a word, all those rare properties so difficult to be acquired.

I.

ASTHENOGENY;

OR,

THE DOCTRINE OF FEEBLENESS.

CHAPTER I.

IDEAS RESPECTING THE VITAL PRINCIPLE.

No mortal being, howe'er keen his eye,
Can into Nature's deepeſt ſecrets pry.

§ 24.

THE naturaliſts and phyſicians of the preſent period, by their indefatigable reſearches, have made great progreſs in the diſcovery of that all-powerful principle, which I ſhall call the vital principle*. This principle we know exiſts; but with its eſſence we are unacquainted.

§ 25.

The vital principle is peculiar to all organized bodies, in which we obſerve irritability and power of action; though the action of the vital principle is

* The motives which induced me to adopt the term *vital principle* rather than *vital power*, the former being more definitive and ſubject to no miſconception, may be found in Röſchlaub's *Pathogeny*, Part I. Were this expreſſion generally employed, it might contribute to make the Brunonians and Anti-brunonians underſtand each other better.

ſometimes not perceptible to our ſenſes, even where it exiſts, as is the caſe in apparent death. § 78. § 82.

§ 26.

The vital principle manifeſts itſelf more freely and with more activity, according to the powers with which it is connected. Its action is merely ſimple when connected with vegetable powers in plants; it acts in a more compound manner when connected with animal nature; but in the moſt perfect degree when connected with the ſpiritual powers in man.

§ 27.

Wherever we find a more delicate, more complex, and more perfect organization, we obſerve alſo a more delicate and more perfect action of the vital principle; conſequently the vital principle is moſt perfect in man. Man lives the moſt perfect life. In man we find a combination of phyſical, animal, and ſpiritual powers, all tending to one end. This wonderful whole; this equilibrium of the action of powers, heterogeneous to each other, is maintained by the vital principle. It is the medium of the ſpiritual, phyſical, and animal nature of man.

§ 28.

The vital principle is different from all the other powers with which we are acquainted. It diſtinguiſhes itſelf from the chemical powers by this circumſtance; that the latter cannot freely exerciſe their action till the union between them and the vital principle is deſtroyed. The proceſs of corruption cannot take place in an organized body, or, at leaſt proceed

proceed to a conſiderable degree, and much leſs be completely ended, until the vital principle is withdrawn from it. This holds good in regard to ſingle parts, as well as of a whole. The vital principle, however, is not ſoul; for it is found without the power of thought in vegetables; and even, in man, it may be in perfect action where the power of thought is totally ſuſpended, or deranged in a high degree, as in thoſe ſtruck with apoplexy, and inſane perſons.

§ 29.

The phenomena of the expanſion of growth, and the concurrence of individual powers, for maintaining organic exiſtence, cannot be effected by a chemical operation alone, but require the aſſiſtance of the vital principle. The operation of the chemical powers acts in ſeparating, decompoſing, and diſſolving the whole; but the vital power, in maintaining and preſerving the being; in keeping together the whole. Even by its action on the chemical powers, it makes them to operate for the ſupport of life.

§ 30.

Hence ariſes the difference between *animated* and *inanimate* bodies. The latter, according to their peculiar nature, are ſubjected, ſooner or later, to the laws of ſolution and decompoſition; from which the former are exempted by means of the vital principle. The action of external impreſſions on animated and inanimate bodies is totally different. Heat communicates itſelf to both; but in a manner altogether different. An inanimate body receives heat in all its degrees; but it can be communicated to animated

bodies only in a certain degree. In an inanimate body heat produces decompoſition and ſolution. An animated body can withſtand a conſiderable degree of it. The air decompoſes inanimate bodies much earlier, and in part ſpeedier, than animated bodies: ſome more and others leſs. All deſtructive external impreſſions, are not only in themſelves leſs prejudicial to animated bodies, as they are counteracted by the vital principle; but their pernicious effects are always removed by a reſtoration of what has been loſt.

§ 31.

The vital principle is ſelf-ſubſiſtent, free, and independent. It is only modified by foreign powers, between which and it there is a certain mutual connection. It exiſts alſo without this connection; that is, without the organization which it at preſent animates. It is not confined to certain bodies; but is generally diffuſed throughout the corporeal world: it is indeſtructible. As ſoon as an organized body is decompoſed, it removes from it, and communicates itſelf to another organization. In a word, it has a great reſemblance to the electric fluid.

The grounds of life, therefore, do not lie in organization, nor in ſtimulants; both are neceſſary conditions of our exiſtence on earth.

§ 32.

The vital principle manifeſts itſelf differently, according to the organization in which it acts. This is the caſe not only in the different organizations of animal and vegetable nature, but alſo in regard to the difference of the organization of bodies of the ſame genus.

genus. Hence the different phenomena of the manifeſtation of the vital principle in ſome men; becauſe each man has his own individual organization. This may ſerve to explain the difference of conſtitution and temperament.

In the laſt place, the manifeſtations of the vital principle are varied by changes made in the organization by diſeaſe; and even by the changes which the organization experiences from external and internal ſtimulants, and by complete conformation at different periods of life.

§ 33.

Each organ, and each of the ſingle ſyſtems of human nature, has its peculiar vital principle; or, to ſpeak with more preciſion, in each of theſe ſyſtems and organs, the vital principle manifeſts itſelf in a manner entirely peculiar: it manifeſts itſelf one way in the nerves, and another way in the lymphatic ſyſtem; it acts one way in the organization of the eye, and another way in the organization of hearing. Theſe different vital functions depend on the particular ſtructure of the organs. The organic ſtructure of the eye is ſo adjuſted that it ſerves, by means of the vital principle acting on it, as an organ by which the images of objects are conveyed to the brain. The caſe is the ſame in regard to hearing. This may ſerve to explain the phenomenon, why ſome of theſe ſyſtems are put into more violent activity, according as certain local ſtimulants act upon a certain organ. Thus ariſe the great activity, the inflammation and ſuppuration of thoſe parts to which veſicatories have been applied. Hence are produced, from the greater or leſs influence of the vital principle, thoſe different changes in theſe organizations and ſyſtems, which we call local diſeaſes.

§ 34.

Some organs and ſyſtems of the human body have a greater ſhare of the vital principle than others; for example, the brain and nerves; the heart, the ſyſtem of the lungs, &c. Theſe we call vital organs.

Theſe organs, by means of their organic conſtruction, are particularly ſuſceptible of the vital principle. How long does life remain in the heart when it is dead in every other part of the body!

§ 35.

The vital principle has a greater or leſs attachment to certain kinds of organization. This we find to be the caſe throughout all nature. The ſimpler the organization the more ſtrongly does the vital power adhere to it. Of this the polype affords a very plain inſtance.

§ 36.

In the organization of the ſame genus, we obſerve alſo a greater or leſs attachment of the vital principle, which counteracts more or leſs the operation of deſtructive powers. This is the caſe in the moſt complex organization of man.

§ 37.

A greater attachment of the vital principle takes place alſo in ſome particular parts of the human body.

§ 38.

The vital principle, in all probability, remains longeſt in the heart.

§ 39. It

§ 39.

It is a principle which we know from its different effects; and to the peculiar phenomena of which we give the name of peculiar powers. Suſceptibility of irritation, irritability, the nervous power, power of reproduction, and the healing power of nature, are nothing elſe than modifications of the vital principle. One of theſe actions may be wanting, or exiſt in a degree imperceptible to our ſenſes, notwithſtanding the preſence of life; and therefore, from the non-exiſtence, or inactive ſtate of irritability, we cannot form any certain concluſion reſpecting the abſence of life. The action of theſe, ſo called peculiar powers, may, in many ſtates, be totally different, without life being thereby particularly affected. It may be impoſſible to excite ſuſceptibility of irritation, even when internal life exiſts. In general the vital principle cannot be explained from one or more of theſe ſo called powers, but from the action of all of them taken together: individually they are merely ſigns of the exiſtence of the vital principle.

§ 40.

The vital principle depends on itſelf alone; but it can be found only under certain conditions, which depend partly on the nature of the organic body, and partly on the action of ſtimulants.

I. ORGANIZATION, OR ORGANIC BODIES.

§ 41.

An organized body, is a body which by means of its internal and external ſtructure, is more capable of

animation; and which by a peculiar (organic) ſtructure differs from all inanimate bodies, and bodies incapable of animation.

This ſuſceptibility of life and animation, is called ORGANIZATION.

1. *Suſceptible of animation.*

To become ſo, a peculiar (organic) ſtructure of body is neceſſary. For example, in the animal body; nerves, cellular membranes, veſſels, fibres: in a vegetable body; capillary tubes, roots, &c.

2. *Animated.*

A body cannot be called organiſed, if it be not ſubject to the influence of the vital principle. As ſoon as the vital principle is withdrawn from a body, it retains its organic ſtructure till the deſiccation, decompoſition, and ſeparation of its ſingle parts, have taken place; but when it becomes no longer ſuſceptible of the vital principle it is dead; it is a lifeleſs body (§ 76.)

Under organization, in general, we underſtand the general conſtruction of a body which renders it ſuſceptible of animation, and which actually contains it within itſelf.

Organ and organic body have an affinitive ſignification; as the inſtruments of life.

§ 42.

All ſingle parts of the body, which by means of their peculiar ſtructure are deſtined for certain operations of life, are called ORGANS: As the organs of hearing, the organs of ſight, &c.

All parts of a body capable of animation, are properly organic: they form that conſtruction.

§ 43.

ORGANISM is the connection of ſeveral organic parts for a certain kind of vital operation. Thus we ſay the organiſm of the brain; the organiſm of the inſtruments of digeſtion. This expreſſion is more appoſite than ſyſtem, which is uſed in the ſame ſenſe.

§ 44.

In the following propoſitions, we ſhall conſider organization in the ſame ſenſe as body, when oppoſed to ſpirit: a maſs capable of being acted upon by the vital principle. In this ſenſe, we underſtand by organization the animal or vegetable bodies, with all their nerves, muſcles, bones, veſſels, formation, ſtructure and mutual connection. We ſhall afterwards ſhew the relation of the human organization, or human body, to the vital principle.

§ 45.

The ſtate of the organization, or organic human body, oppoſes more or fewer obſtacles to the free manifeſtation of the vital principle. When the organization is deſtroyed, the action of the vital principle is rendered impoſſible; by a faulty organization it is impeded. The defects may exiſt either in the organiſm of the body, in general, or in ſingle organs. By theſe the ſuſceptibility of the body for the vital principle is always impeded.

This may be illuſtrated by the electric matter, which has always a greater attachment to one body than another.

§ 46. Single

§ 46.

Single parts may contain more or leſs of the vital principle, according to their nature and condition; it may be partially annihilated, as in caſes of mutilation, or they may have organic defects.

§ 47.

By this greater or leſs accumulation of the vital principle, in ſingle parts of the body, there ariſes an UNEQUAL DISTRIBUTION of it, which is called a diſeaſed ſtate. Thoſe parts of the body in which the vital principle is excluſively or particularly active, and in which it ſeems to concentrate itſelf more by a greater accumulation, are worn out and weakened by its too great activity. This weakneſs of ſingle parts ſpreads at length, throughout the whole body; and effects a general debility, which becomes the cauſe of death.

§ 48.

DEFECTS IN THE ORGANIZATION ARE,

1. *Natural.*

As in the caſe of men born without certain parts belonging to the whole, or with variations from the uſual ſtructure. In this claſs may be placed innate mutilations, blindneſs, dumbneſs, &c.

2. *Accidental.*

Defects in the organization through diſeaſe, the cauſes of which are either *external* or *internal*. To this claſs belong thoſe changes which are occaſioned in the organization by the deſtructive hand of time, and the changes

changes which take place in *old age*. By the inceſſant activity of life, its reſtleſs movements, muſcular exertion, and the impetuous pulſation of the blood againſt the veſſels, the organic parts are gradually worn away, and as matter are conſumed of themſelves.

§ 49.

The ſpecific ſuſceptibility of the organization is alſo here to be taken into conſideration. It is obſerved that ſome bodies are more fitted than others for receiving the vital principle.

This ſuſceptibility is either originally preſent in a greater or leſs degree, according to the peculiar organic ſtructure of certain parts; or accidental, in conſequence of the free or impeded expanſion of organic parts. It may at firſt be weak, and gradually increaſe; it may be loſt in the courſe of time, or may be ſuddenly withdrawn from a body, as in old age; or by the action of ſpeedy poiſons, and the mechanic deſtruction of organic parts, through external violence.

§ 50.

It is an obſervation of ſome importance, that this ſuſceptibility exiſts in our bodies in a greater or leſs degree at certain periods. This holds good, both in regard to the general organization of the body, and to ſingle parts. Obſervation of the latter, as in the caſe of lameneſs, may ſerve to illuſtrate the firſt. I am diſpoſed therefore to admit rather a leſſened ſuſceptibility of the body, than a greater or leſs accumulation of the vital principle.

II. STIMULANTS.

II. STIMULANTS.

§ 51.

Under the term ſtimulants is underſtood every thing that exerciſes an action on man; our external and internal condition; and hence external and internal ſtimulants.

§ 52.

1. EXTERNAL STIMULANTS: air, heat, light, &c.

2. INTERNAL STIMULANTS: all movements of every kind which take place in the body.

We do not underſtand by external ſtimulants ſuch things as act merely on the ſurface of the body; nor by internal ſuch as penetrate to the interior part of it; but ſtimulants which act from without or from within; internal, thoſe by which, through ſome cauſe exiſting in the organization, a change in it is effected; external ſtimulants, thoſe by which the ſame effect is produced through ſome cauſe exiſting without the organization. All external and internal ſtimulants produce changes in the body.

All theſe ſtimulants when moderate ſerve for maintaining life; but if too violent they deſtroy the organization, and produce too great activity of the vital principle; if too weak, they are incapable of exciting that activity which is neceſſary for life.

We ſhall here take notice of thoſe external ſtimulants which are indiſpenſably neceſſary for maintaining life. Without theſe external ſtimulants no life can exiſt, and if they are entirely withdrawn, the organization immediately becomes incapable of animation.

tion. An animal muſt die inſtantaneouſly when deprived of air. The remains of life, which we obſerve in an animal under the exhauſted receiver of an air-pump, ſhews ſome air is ſtill left in it. Among theſe indiſpenſable requiſites of life are air, light, heat, and vegetable or animal nouriſhment. That the firſt-mentioned afford real nouriſhment to life needs no proof.

AIR.

§ 53.

Without air, no animated body can exiſt; plants and animals both die in vacuo.

But we muſt not conſider air merely as an element aſſigned to us for living in, but as the real pabulum of life. We not only inhale it through the lungs, but imbibe it through the whole ſurface of the body. Air conſiſts, in particular, of two component parts: oxygen and azot. The former, as the baſis of vital air, is favourable to vegetable and animal life; but the latter is pernicious and mortal, particularly to the life of animals. According as the quantity of either of theſe is increaſed or diminiſhed in the atmoſpheric air, it becomes more ſalubrious or deſtructive. Something, however, depends on the conſtitution of the body; whether the vital principle in it be more or leſs active, and whether the juices contain more or leſs oxygen or azot. Hence it happens, that too pure air, which contains a large quantity of oxygen, is inſupportable to aſthmatic people; while, on the other hand, it is exceedingly proper for thoſe who are ſcorbutic. Oxygen is the real pabulum of life; but it muſt always be in a combined ſtate, becauſe when entirely

tirely pure, without a mixture of azot, it excites in an immoderate degree the activity of the vital principle, and consumes feeble life too speedily. Birds kept in vital air have been exceedingly lively; but they existed only a short time *.

LIGHT.

§ 54.

Another important power, which has a great influence on our life, is light. Being friendly and beneficial both to animals and plants, it contributes towards the duration of their existence. It is probable that it acts upon us not merely through the eye, but through the whole organization of the surface of the body; for every stimulant which acts in a particular manner on any organ, susceptible of its impression, acts also in a sensible degree on the remaining part of the whole organization: on the mind and body. The lowest degree of light is darkness. The less light, the more melancholy and sickly is the condition of the animated body. An excess of light, however, increases irritability too much; excites indirect feebleness, relaxation after too great tension, and hastens vital consumption. A moderate degree of light is always the most supportable; but we must not forget that many bodies for their existence require different degrees of it. Plants do not thrive in darkness; in a close apartment they always incline towards that quarter where there is most light. Men immured in

* Röschlaub in his Pathogeny, II. § 916—931, adduces some strong arguments against the assertion that the more air contains oxygen the more it excites life.

gloomy

gloomy jails become pale, and aſſume a miſerable appearance *.

The more light is increaſed, the greater is the activity of the vital principle. With a deprivation of light nature has connected a decreaſe of vital activity, and regulated our ſtate of being aſleep or awake by the alternation of light and darkneſs. The order of nature cannot be reverſed without injury to the body. Man, therefore, can do nothing more favourable to life, than to adhere to its regulations. This plan was followed by the firſt of the human race, who inhabited the earth; and by theſe means they reached the proper term of human exiſtence.

HEAT.

§ 55.

Heat is an eſſential requiſite of light, with which the vital principle is moſt intimately connected. Wherever there is life there is heat; yet life requires a moderate temperature of it which is neither real cold nor heat. The actual abſence of heat, or abſolute cold, occaſions the death of every created being. By means of the vital principle, however, organized bodies can endure, for a longer or ſhorter period, an exceedingly high or low degree of heat; but abſolute heat or abſolute cold would deprive them of all life as ſpeedily as lightning. The former conſumes and diſſolves; the latter benumbs. What we call cold is properly a mixture of a preponderating or greater portion of abſolute cold with heat; as, on the other

* Röſchlaub's Pathogeny, II. § 1075, &c.

hand,

hand, our heat is a mixture of a greater accumulation of caloric with a disproportioned smaller quantity of cold.

This observation, in a practical view, is of more importance than might be supposed. It will serve to explain why, in the treatment of persons frozen to death, ice water acts as an exciter of heat.

Though an organized body may be deprived of external heat, we must not say that it is destitute of internal heat, with which the internal oppressed life is connected. In general, as long as a body is fully animated; that is, as long as the vital principle within it is fully active, it is never destitute of internal heat: where there is a deficiency of this natural heat life is always feeble. This holds good in general of the whole body, as well as of single parts. If the vital principle be oppressed and not sufficiently active, nothing can give us hopes of the restoration of its activity but the presence of the natural heat; at least wherever we perceive that heat, the vital principle exists, though all the other signs by which it is announced, and even motion, be wanting. This holds good both in general, and in regard to single parts of the body. Thus, for example, in cases of lameness, we may conclude that the vital principle is still present, even in the maimed parts, only that it is not sufficiently expanded and active; that it is in an oppressed and confined state.

§ 56.

The attachment of the vital principle to heat is observed in the treatment of persons apparently dead; as internal heat is the strongest stimulant for exciting the dormant life, and calling forth the internal heat of the body.

§ 57. Heat

§ 57.

Heat evidently ſtrengthens and animates; cold weakens. The former has been fully eſtabliſhed by Marcard, in treating on the effects of the warm bath. The weakening power of cold ſeems, however, contrary to our uſual obſervation, and to our ſenſations, ſo apt to deceive us; but too little attention has hitherto been paid to heat and cold in regard to their influence on the vital principle. When a great activity of the vital principle prevails, there is a great degree of natural heat in the body; whether this great activity be regular, as in the ſtate of health, or irregular as in inflammatory diſeaſes. Hence it happens, that people in this condition, with an immoderate degree of internal heat, are leſs ſenſible of cold, or are rather refreſhed by it; as it ſerves to conduct from the body the ſuperabundant heat. In the contrary-caſe, where the vital principle is leſs active, and where feebleneſs exiſts, as in people whoſe powers have been exhauſted by chronic diſeaſes, the effect is entirely different. Such perſons will find themſelves much incommoded by cold; they require rather heat. How then can cold be properly conſidered as a real ſtrengthener? In the firſt caſe it is merely negative. Cold, however, by ſpeedy application may act as an indirect ſtrengthener; but then it acts as a ſtimulant, as in waſhing with cold water. The cold-bath, therefore, is in general beneficial, when employed for a very ſhort period.

The difference of the relation which external heat has to living and dead bodies muſt alſo be remarked. Living bodies receive external heat only to a certain

degree; inanimate bodies receive it in all its degrees. That a greater degree of natural heat is connected with a greater activity of the vital principle, may be obſerved by that more diffuſed heat produced by the uſe of ſpirituous liquors.

§ 58.

There are ſtill two ſubordinate requiſites for the maintenance of the vital principle; water and earth.

§ 59.

Water, by its peculiar animating principle, that is oxygen, has an affinity to the vital principle. This is obſerved in vegetable as well as in animal life. How refreſhing is warm rain for all vegetables! The beneficial animating effects of the bath, and of the uſe of pure freſh ſpring water, ariſe from the ſame cauſe. Water, by remaining in a ſtagnant ſtate, loſes this property. Water, however, contains alſo nouriſhing particles; the influence of which, in regard to the maintaining of vegetable and animal life, is evident from obſervation.

§ 60.

Earth, with great juſtice, is called our general mother. Plants derive immediately from the earth their coarſeſt nouriſhment, which, by the vital principle, is converted into the eſſential ſubſtance of the plant. Poiſonous plants, therefore, can grow in the ſame ſoil cloſe to ſalutiferous herbs. But the earth is alſo, in a phyſical ſenſe, the mother of mankind. The human body contains in its compoſition, not only earthy particles, but receives earthy matter in its food and drink, and even in water. As long as the vital principle is in full unimpaired activity, a ſu-

perabundance of earthy particles is prevented; but the more this activity is leſſened by age and bodily infirmity, the more the earthy part in the human body increaſes; and after the total loſs of the vital principle, man returns to the earth from which he was formed.

§ 61.

The nouriſhment which plants derive from the earth, and which animal bodies obtain from food and drink, ſerves not only as a requiſite for the activity of the vital principle, but as a neceſſary ſupport of life. This nouriſhment is indiſpenſible for maintaining the organization; and is employed to ſupply the loſs occaſioned by the action of the vital principle. Life itſelf may be compared to flame, which cannot be kept up without nouriſhment; but certain external matters are converted by the vital principle into nouriſhing ſubſtances, and aſſimilated with the body. Our bodies are therefore continually ſuffering waſte, and the organization becomes exhauſted if it receives no addition from without. This is death ariſing from hunger, or when, on account of the faculty of aſſimilation and animalization being loſt, the body is rendered unſuſceptible of nouriſhment, as in conſumptive diſorders.

§ 62.

The more active life is the greater is the conſumption of bodily nouriſhment; and the greater the need of reſtoration if we wiſh to prevent inanition and conſumption. But the whole effect does not depend here on the quantity of reſtoration; a great deal depends alſo on the activity of the vital principle, and of the ſyſtem of digeſtion. We can thence ex-

plain why conſumptive people, however much food they may uſe, ſtill waſte away and become more and more exhauſted.

ACTION OF DIFFERENT STIMULANTS ON THE VITAL PRINCIPLE.

§ 63.

We ſhall farther conſider the action of different ſtimulants on the vital principle. Among theſe ſtimulants are air, heat, and light, which, as already obſerved, are abſolutely requiſite for life; nouriſhment and ſubſtances, which act in ſmall quantities, as medicines and poiſons. Theſe ſtimulants are of different kinds.

1. MECHANICAL; ſuch for example as external force from the action of hard bodies.

2. CHEMICAL; as food and drink; both theſe kinds of action we comprehend under the name of phyſical ſtimulants.

§ 64.

To this head belong alſo mental ſtimulants, ſtimulants of the ſoul, through the power of the will.

§ 65.

The relation of the vital principle to the thinking faculty requires particular conſideration, by which the difference between them will be better illuſtrated.

1. Between the ſoul and the vital principle there is an inſeparable relation. The vital principle may ſubſiſt without ſoul; but the ſoul can inhabit no organized

ganized body without the vital principle. The vital principle forms the connecting medium between the phyſical and ſpiritual nature of man. When the vital principle is withdrawn from individual parts of the human body, they are no longer ſubject to our will; as is the caſe in regard to limbs attacked by lameneſs.

2. We can at will increaſe the activity of the vital principle. The exertion of the will to move a lame member, is not always unattended with effect.

3. Mental ſtimulants act alſo independently of our will, in exciting the activity of the vital principle, and produce aſtoniſhing exertions, particularly of the muſcular powers. Hence the extraordinary ſtrength of very weak people when danger ariſes from fire.

4. The influence of the ſoul on the vital principle, during violent paſſions; ſuch as anger, fear, terror, is particularly to be remarked.

5. The mental powers have no leſs influence in regard to maintaining the vital principle in the body, and to the duration of life.

§ 66.

The relation of external ſtimulants to the vital principle, muſt here be remarked alſo. They act on this principle different ways:

1. MEDIATELY, through the body, or through changes previouſly produced in the organization.

2. IMMEDIATELY, on the vital principle itſelf, or in the next place on the principal organs of life, the brain and nervous ſyſtem; for example, the mental ſtimulants of the paſſions through the effect of fear: alſo phyſical ſtimulants, lightning, and poiſon of the

laurel cherry; all exhilarating ſubſtances, ſpirituous liquors, &c.

§ 67.

The difference between the mediate and immediate effects of ſtimulants on the vital principle, may be explained by comparing the conſequence of the uſe of common ſolid nouriſhment and ſpirituous liquors, particularly in regard to thoſe unaccuſtomed to them.

§ 68.

By cuſtom and long uſe, ſtimulants which have an immediate action on the vital principle, may, according to what has been ſaid in the preceding ſection, be claſſed among thoſe which have a mediate action, as is the caſe in regard to ſpirituous liquors.

§ 69.

We muſt particularly diſtinguiſh thoſe ſtimulants which act excluſively on the vital principle, and which by their ſtrength annihilate life in a moment, and deprive the body inſtantaneouſly of all its vital principle; as in the caſe of death by lightning, or through violent fear.

§ 70.

The conſequence ſtill more ſhews this immediate action on the vital principle, as the putrefaction which ſpeedily takes place in the bodies of thoſe killed by lightning, where the operation of the chemical powers begins immediately after the vital principle has been totally withdrawn.

§ 71.

Between the mediate and immediate action of ſtimulants on the vital principle, there are however many degrees, as the organization is ſometimes more affected, and ſometimes the vital principle.

§ 72.

External ſtimulants act upon the body alſo:

1. By EXCITING: wine and heat increaſe the activity of the vital principle.

2. By DEPRESSING: exceſſive evacuations or fatigue leſſen the activity of the vital principle.

More, however, depends on the quantity of the ſtimulant, than on the ſtimulant itſelf. Wine exhilarates when uſed in moderation, but if uſed immoderately may reduce a perſon to the ſtate of apparent death.

§ 73.

We muſt here farther take into conſideration the ſuſceptibility of the body for irritation (§ 79), which is:

1. GENERAL: a ſuſceptibility of all ſtimulants whatever.

2. SPECIAL: a ſuſceptibility for particular ſtimulants. Many perſons, therefore, are particularly affected by certain things.

§ 74.

The body is rendered more or leſs ſuſceptible of irritation, by a great many cauſes which ariſe from the conſtitution and habit; we muſt alſo take into

account the more remote exciting cauſes: mode of life, nouriſhment, phyſical and moral condition.

§ 75.

Another difference is to be remarked between the general ſuſceptibility of irritation in the whole body, and the ſuſceptibility of individual organs often ſo remarkable.

In the perfect ſound ſtate there is an equal diſtribution of this ſuſceptibility.

A want or exceſs of it in the whole body or ſingle organs is the diſeaſed ſtate.

ANIMATED ORGANIZATION.

§ 76.

The idea of animated organization gives us a point of union to the different opinions of the phyſiologiſts, who ſometimes explain the phenomena of human nature from organization conſidered as body; and ſometimes from the vital principle alone; or at any rate grant too much to one of theſe cauſes. All theſe phenomena may be explained from animated organization in connection with the power of thought, and conſequently from the whole man. In future, therefore, when we ſpeak of the vital principle, or organization, the reader muſt keep in mind, that the vital principle manifeſts, and can manifeſt itſelf, only in an organized body; and that an inanimate organization, deprived of the influence of the vital principle, is nothing but a corpſe.

§ 77. We

§ 77.

We obſerve two properties of animated organization, or effects by which the vital principle manifeſts itſelf in organized bodies, viz. irritability and the power of action.

§ 78.

IRRITABILITY *(Irritabilitas)* is the property of organized fibres to re-act, on the application of a ſtimulant, by contraction, by becoming ſhorter, and by making their component parts to approach each other, but only in the place which is topically affected by the ſtimulant. This property, however, does not always exiſt in an equal degree. Sometimes it eſcapes our uſual obſervation; can be excited only by metallic ſtimulants, and is ſometimes inſenſible to theſe, even though the vital principle may be preſent: for as long as the vital principle is preſent irritability exiſts. Irritability is an effect of the vital principle; and the more active that principle is the greater the irritability. But we know that the activity of the vital principle, and the ſum of it, may be in a very different ratio; and therefore in the diſeaſed ſtate we often find the greateſt manifeſtations of irritability. On the other hand irritability may exiſt, and yet give no evident indication of its preſence, when ſuſceptibility of irritation is wanting.

§ 79.

Senſation, or the faculty of organized fibres to be affected by ſtimulants, Hufeland calls SUSCEPTIBILITY OF IRRITATION. In this work we conſider it not as a peculiar ſelf-ſubſiſtent property of animated organization, but comprehend it under the idea of irritability.

irritability. It is very true, that the organization is ſometimes more or leſs ſenſible to ſtimulants; that ſuſceptibility of irritation ſeems, under certain circumſtances, to be totally deſtroyed, and that ſtimuli are received without any ſenſible re-action. But irritability and ſuſceptibility of irritation have a certain relation, and are always preſent with each other, only this relation is not at all times the ſame; for both may be preſent in ſuch a very different degree, that one of them is not perceptible to us by external ſigns. Suſceptibility of irritation, therefore, is the faculty of being affected by the impreſſion of ſtimulants, and irritability comprehends the changes occaſioned in the animal body by theſe ſtimulants.

§ 80.

Irritability is in an unequal ratio with the vital principle. Though the former is an effect of the latter, it is prevented from manifeſting itſelf by various impediments, or is excited in too great a degree by ſtimulants. In both caſes, more or leſs of the vital principle may be preſent in the organization. A confined ſtate of the vital principle, and oppreſſed irritability, are obſerved in apparent death, though internal life may ſtill be exiſting, and immoderate irritability, with feeble life is obſerved in malignant nervous fevers, as is proved by the convulſions of thoſe who die of theſe diſeaſes.

Irritability in different ſtates is ſtronger or weaker; immoderate or deficient as in many diſeaſes. This is the caſe alſo at different periods of life. Irritability is ſtrongeſt in childhood, and weakeſt in people of a very great age.

Irritability

Irritability is ſtronger in the female than in the male ſex.

Education, mode of life, and occupation, make a great difference in regard to plus or minus.

Irritability may exiſt in different organs in a very different degree; for example, a great irritability of the organs of digeſtion, of the organs of thought, of the organs of generation, &c. This difference is of great importance in the treatment of patients.

§. 81.

From the above diſproportion between irritability and the vital principle, we can aſcertain what dependance is to be placed on Creve's teſt of apparent death. Metallic irritation is the mean by which we are able to excite irritability, in caſes when it is no longer excitable by any other ſtimulants with which we are acquainted. We convince ourſelves, therefore, by this experiment, ſo far as irritability is an effect of the vital principle, whether life is ſtill preſent. But it may be aſked, whether the vital principle cannot be preſent in ſo weak a ſtate, as to be no longer capable of being excited? and in that caſe this proof would afford as uncertain a teſt for examining whether life be preſent, as the remaining natural heat which we obſerve in apparent death that ends in real death, a long time after all other ſigns of life perceptible to our ſenſes have diſappeared. This proof alone gives us therefore nothing certain; but when connected with ſome particular ſymptoms may be of importance. In individual parts ſeparated from the body, we obſerve this property, as the effect of the vital principle, ſtill preſent in theſe parts; but when the vital principle is withdrawn it diſappears alſo. But may not

ſuſceptibility

ſuſceptibility of metallic ſtimulus be withdrawn from individual organs, or be incapable of being excited in different muſcular fibres, notwithſtanding the exiſtence of internal life? Creve himſelf confeſſes, that in many muſcles it was ſometimes impoſſible to excite convulſive movements by metallic ſtimulants; and therefore he adviſes trials to be made in ſome other place. All this, however, does not leſſen the merit of the acute Creve, who firſt applied to this uſe metallic ſtimulants, with which trials ought always to be made in doubtful caſes.

§ 82.

The POWER OF ACTION is the faculty of exerciſing the vital functions, which require a certain exertion of the activity of the vital principle. To this head belong muſcular power, capability of movement, the power of digeſtion, ſecretions, and excretions; all the voluntary or involuntary functions of human nature, performed with conſiderable exertion of power.

§ 83.

The power of action, when the vital principle and organization are well conſtituted, is in its natural ſtate. Where there is an immoderate activity of the vital principle, it is in an unnatural ſtate; that is, acts more violently than what is required for preſerving an equilibrium of the powers, as in the caſe of inſane perſons. Where the vital principle is weak it is feeble; when the vital principle is oppreſſed it is ſometimes very weak, and ſometimes when there is an actual want of the vital principle it is exceedingly violent. Such exertions of ſtrength may be found in malignant

malignant nervous fevers, where the patients often before death jump from bed. All theſe ſhew a diſeaſed ſtate of the power of action.

§ 84.

We find the ſound as well as the diſeaſed ſtate of the power of action partly general, and partly in individual organs. As it may be ſaid in ſome reſpects that each organ has its own vital principle, we can ſay alſo that each organ has its own power of action. The power of action may be ſtronger in ſome organs, and in others weak; and in ſome ſo violent that the reſt ſuffer from it; as in the organs of the ſoul, the organs of generation.

§. 85.

The influence of the ſoul over the vital principle, appears moſt clearly in the power of action. What muſcular ſtrength cannot the will, when animated by paſſion, give to the weakeſt bodies! The freer and ſtronger the action of the vital principle, the more does it ſhew itſelf in the power of the will. Every thing that exalts and excites the vital principle can alſo ſtrengthen the latter. Thus after a glaſs of wine or agreeable news, we are able to continue our labour with more vigour. Every thing that weakens and leſſens the activity of the vital principle, weakens alſo the power of action. This holds good in regard to direct as well as indirect dibilitating cauſes; hunger, want of ſleep, the immoderate uſe of ſpirituous liquors. Even by immoderate joy the ſpontaneous functions are impeded.

The power of action depends alſo on the good ſtate of the organization, conſidered as body; on the good ſtructure of the organic parts; and, on the other hand,

ſuffers

ſuffers through organic injuries from within and from without.

§ 86.

The power of action is ſtrengthened by every thing that nouriſhes and ſtrengthens the body. It is increaſed by exerciſe, is accumulated by reſt; but weakened and leſſened by immoderate labour, long watching, and want of neceſſary movement.

CONCLUDING OBSERVATIONS ON THE VITAL PRINCIPLE, AND DEATH IN GENERAL.

§ 87.

The vital principle may exiſt in an organized body in very different degrees. This difference depends on the organization of the body itſelf; according as it is more or leſs ſuſceptible of the vital principle.

This difference of ſuſceptibility is obſerved,

1. In the nature and conſtruction of different bodies; thus there is more vital principle in plants than in animals.

2. In the particular vital ſuſceptibility of organized bodies of the ſame genus; thus ſome men have a much greater quantity of the vital principle than others.

§ 88.

This ſuſceptibility of the vital principle is,

1. ORIGINAL: innate as it were; *fortes creantur fortibus.*

2. ACCIDENTAL: it is deſtroyed by diſeaſes which effect a derangement of the organization.

§ 89.

A total loſs and deprivation of the vital principle, and

and a commencement of the free action of the chemical powers in the body, is death.

§ 90.

Death enſues:

1. In conſequence of the organization being deſtroyed, by which means it is rendered incapable of being acted upon by the vital principle. This is effected,

a) By the force of external powers and violent impreſſions.

b) By the gradual decay of vital ſuſceptibility in the organization in the courſe of time: death in old age, when the organs become inſenſible to external ſtimulants; when their ſuſceptibility of irritation even is blunted, by which the progreſs of the bodily functions is rendered ſluggiſh and ſlower, ſo that they can be excited only by uncommon ſtimulants, till the machine at length ſtops.

c) By the long continuance of very violent excitement, or an immoderate activity of the vital principle, which produces weakneſs and death; an irregular life, uninterrupted mental irritation.

2. Or by the loſs of the vital principle itſelf, even when the organization is in a perfect condition, in which caſe the vital organs alone ſuffer.

§. 91.

Death enſues either SUDDENLY, when the body is at once exhauſted of the vital principle; or SLOWLY, which is common natural death.

Except in theſe ſudden caſes, the tranſition from life to death takes place ſlowly; and the vital principle always lingers in the chief organs, even when it has been withdrawn from all the external parts of the body.

body. In the moſt common kind of death, the tranſition takes place by means of apparent death, or apparent external death.

§ 92.

We ought never to conclude that real death has taken place, until the operation of the chemical powers has begun to produce decompoſition and putridity. It is on theſe alone that we can eſtabliſh any certain ſigns for aſcertaining real death, and not on deficient individual effects of the vital principle, deficent excitability, &c. Unfortunately, therefore, we have no ſign of death, on which greater dependance can be put, than corruption, until we ſhall be able to diſcover the commencement of the free activity of the chemical powers, which takes place before it is perceptible to us by external ſigns.

§ 93.

Every thing that has been ſaid of the vital principle may be applied to life. Life is a product of the vital principle, depending on the ſtate of the organization and external ſtimulants. We cannot properly call it, as Brown does, a forced ſtate; ſince it is as free as the vital principle, though it cannot exiſt but under certain conditions.

§ 94.

The different degrees of life are thoſe of the vital principle: its ſtrength or feebleneſs depends on the quantity and activity of the vital principle.

The quantity and activity of the vital principle are not always in the ſame ratio (§ 402). A great deal of life may exiſt where the activity of the vital principle is ſmall, and irritability weak. On the other

other hand it is poſſible that, with a high degree of vital activity, life may be exceedingly feeble. This is immoderate, diſeaſed vital activity and irritability, which often manifeſt themſelves a little before death, and by which the ſmall quantity of the vital principle ſtill remaining is ſoon exhauſted. The only proof of a great deal of life is a continual uninterrupted activity of the vital principle, without being exhauſted. Thus people in the years of youth, can, without injury to their powers, undertake very ſevere labour.

§ 95.

For this purpoſe a great ſuſceptibility of the organization for the vital principle is required; and conſequently ſolid, irritable fibres; theſe muſt

1. Have the property of being eaſily acted upon by the vital principle.

2. Muſt be durable enough to bear the continued impulſe of ſtimulants.

§ 96.

The organization loſes both theſe in old age; and hence ariſe inſenſibility, weakneſs, and rigidity.

CHAPTER II.

ON THE ASTHENIC STATE OF LIFE.

§ 97.

THE idea of FEEBLENESS is entirely relative, and can be defined only by comparing it with ſtrength. Feebleneſs is properly a leſs degree, and not the oppoſite of ſtrength; a deviation from the ſound ſtate, or from that ſtate which has all the properties of perfect life.

§ 98.

Thoſe unacquainted with medical principles, and ſometimes even phyſicians, form concluſions reſpecting general and actual vital feebleneſs, merely from external ſigns, ſuch as impeded or weak power of motion. But this is only partial feebleneſs of the muſcular power, which may exiſt with a certain degree of vital ſtrength; or from great laſſitude and heavineſs of the limbs; a diſpoſition to faint; and from the external ſtructure of the body. But all theſe ſymptoms indicate falſe as well as real feebleneſs.

§ 99.

Pathology gives us different kinds of feebleneſs.

1. From DEFECTIVE COHESION. Hence the unfitneſs of the ſolid parts to perform their functions. The cauſe lies in ſome injury ſuſtained by the organic parts, from wounds, lameneſs, &c. To this head belongs relaxation; decreaſe of coheſion, by which the extenſibility of the ſolid parts is increaſed, but their power

power of contracting is leſſened. This is the caſe in children.

2. FEEBLENESS FROM TENDERNESS. After violent extenſion, no regular contraction follows. In this ſtate there is a weak connection of the fibres, which are therefore eaſily torn.

3. FEEBLENESS FROM A WANT OF VITAL POWER. According to Brown, feebleneſs, ASTHENIA, ariſes, in general, from a want of excitement; that is, from too great a deficiency in the effects of the exciting powers (ſtimulants). Only moderate action (excitement) produces the ſtate of health, more or leſs diſeaſe. Strength (ſthenia) ariſes from increaſed excitement.

Brown aſſumes a direct and indirect feebleneſs; one of which depends on a deficiency of ſtimulus and excitement, the other on a diſproportioned exceſs of them. A deficiency of the neceſſary excitement is occaſioned by things which do not ſtimulate ſufficiently, or which deprive us of the ſtimulating powers; among theſe may be reckoned cold, bad nouriſhment, immoderate ſtimulants, weakening immoderate heat, diſſipation, intemperance, &c.

All theſe different opinions may be reconciled, if we ſeek for the grounds of feebleneſs in a deviation of the animated organization from its natural ſtate; and conſequently in the vital principle as well as in the organized body. This will be better illuſtrated by the following reſearch reſpecting feeble life.

§ 100.

It is of great importance to make a proper diſtinction between feebleneſs *(aſthenia)* and ſtrength *(ſthenia)* in order to guard againſt the many practical errors which ariſe from confounding theſe two terms.

Sthenia, real vital ſtrength, ſuppoſes, in REGARD TO THE VITAL PRINCIPLE,

1. A ſum of the vital principle proper for maintaining life.

2. A free unimpeded activity of the vital principle:

IN REGARD TO THE ORGANIZATION,

1. Good bodily ſtructure, by which the body is rendered as fit as poſſible for the action of the vital principle; and for diſcharging the vital functions. To this belong the matter of the body, and even the external form.

2. A good ſtate of the organs.

a) A due proportion of the fundamental component parts.

b) Good coheſion, and proper admixture of the ſolid and fluid parts.

The cauſes and conditions of this ſtate are external and internal action; excitement in a moderate degree.

This is the real ſtate of health. All deviations from it are feebleneſs. Theſe deviations are,

a) Such as *exceed* the real moderate degree of true vital health and ſtrength.

b) Or ſuch as *fall ſhort* of the moderate degree of vital ſtrength.

In the firſt caſe we obſerve an immoderate activity of the vital principle, with a ſufficient quantity of it preſent, and a good ſtate of the organs: for example; when men of a full habit are ſuddenly attacked by inflammatory fevers. This ſtate might be called *hyperſthenia:* it is ſimilar to that which Brown calls ſthenia.

In the ſecond we obſerve either a deficiency in the ſum of the vital principle, or a conſiderable derangement in the organic parts, or both: for example; diſeaſes

diſeaſes brought on by ſevere labour, and low feeding; all diſeaſes, after a certain period of continuance. This ſtate is ASTHENIA, feebleneſs.

Sthenia paſſes into Aſthenia when the organs, by too great activity of the vital principle, have been conſiderably injured. Thus inflammation of the breaſt paſſes into aſthma. Hence it is evident, what diſeaſes ought to be claſſed among the ſthenic, and what among the aſthenic. For the aſthenic diſeaſes, ſee § 258, &c.

Prediſpoſition is a certain conſtitution of the animated organization, which exiſts long before any diſeaſe of a certain kind makes its appearance; and which is the fundamental cauſe of it. Thoſe therefore who have ſuch a prediſpoſition or inclination to a certain kind of diſeaſe, will be attacked by that diſeaſe, when the firſt cauſe fit to produce it occurs. Thus ſome have a prediſpoſition to inflammatory or cachectic diſeaſes, others to conſumption and hypochondria.

STHENIC PREDISPOSITION. A prediſpoſition to ſthenic diſeaſes, is that conſtitution of the animated organization which expoſes it to ſthenic diſeaſes; for example, a plethoric habit, great mobility in the functions, muſcular power, high ſpirits. It is promoted by rich living, wine, ſpices, reſt, &c.

ASTHENIC PREDISPOSITION. Prediſpoſition to aſthenic diſeaſes is the oppoſite. It will be found explained, § 159.

§ 101.

FEEBLE LIFE is the conſequence, 1. Of a deficiency of the vital principle; 2. Of confined activity of the vital principle; 3. Irregular activity of that principle; 4. Defective conſtitution of the organization.

§ 102.

The vital principle, in regard to its ſum, may be preſent in the body in greater or leſs quantity. We muſt diſtinguiſh alſo, ſo far as perceptible to us, the manifeſtation of the operations of the vital principle, from the vital principle itſelf. The activity of the vital principle is never in the ſame ratio as the ſum of it preſent (§. 314.).

§ 103.

1. Feeble life is the conſequence of a deficiency in the ſum of the vital principle. Of this we have an inſtance in extreme old age; which may be illuſtrated by the oppoſite ſtate of vital ſtrength: when an organized body poſſeſſes the whole ſum of the vital principle, which it is capable of receiving, as is the caſe in the full bloom of youth and manhood. When the vital principle is deficient, all the functions of the body are performed ſlowly, the circulation of the blood and juices is confined, and the conſequence is obſtructions and accumulations; the digeſtion becomes weak, the muſcular power is loſt, ſuſceptibility of irritation gradually vaniſhes, and is blunted, which produces inſenſibility to external ſtimulants. The ſuſceptibility of the organization for being acted upon by the vital principle is weakened, as it does not receive ſufficient excitement from that animating principle. Hence ariſe laſſitude, debility, torpor, inſenſibility, waſting and conſumption, death through old age. The action of the mental powers on the organization is alſo confined by a deficiency of the vital principle; and, on the other hand, the organs of the ſoul ſuffer by the general feebleneſs of the body.

Hence the weak manifeſtation of the mental powers in old age, and particularly loſs of memory.

But we muſt take care to diſtinguiſh actual want of the vital principle, from a mere deficiency of ſome of its individual effects: ſuch as the power of the nerves, muſcular power, irritability, ſuſceptibility of irritation, and the power of reproduction. Some of theſe effects may be more or leſs ſtrong. We muſt diſtinguiſh alſo the confined or defective action of the vital principle on ſingle organs; as for example, a deficiency in the power of digeſtion, aſſimilation, ſight, and in individual ſenſes in general. In ſuch caſes, however, there may not be, upon the whole, a deficiency of the vital principle, but only a partial weakneſs.

§ 104.

The loſs of the vital principle is irreparable. This holds good not only in regard to a total loſs of this principle, that is death, but alſo to that ſtate in which the vital principle is in part withdrawn from the organized body. We muſt, however, make a diſtinction between this ſtate, and that wherein the vital principle ſeems to be exhauſted for a certain time; as through fatigue, from labour, and violent exerciſe. I make uſe of the expreſſion ſeems, becauſe where the vital principle is abſolutely exhauſted, no reparation of it can take place. The vital principle cannot, like the electric matter, leave a body, and afterwards return to it, as is the caſe in regard to bodies to which the electric fluid has been merely communicated; for the animated body, to apply this to the vital principle, is an ideolectric body, which contains its vital principle within itſelf; but this principle,

according to the nature of circumſtances, manifeſts itſelf more or leſs, and is put into activity by being acted upon either externally or internally.

§ 105.

It is an obſervation of great importance, that even where there is an actual deficiency of the vital principle, the powers of the mind continue to act in full vigour. Of the truth of this obſervation we have ſtriking inſtances in a Voltaire, a Euler, and a Frederick II. To this belongs alſo the retainment of the powers of memory, during the feebleſt ſtate of old age. Nothing can ſhew more clearly the difference between the vital principle and the ſoul.

§ 106.

2. CONFINED ACTIVITY OF THE VITAL POWER.

This ſtate, when the power exiſts, and is only prevented by impediments from manifeſting itſelf, we may, with Brown, call indirect feebleneſs; and that ſtate, on the other hand, where there is an actual deficiency of the vital principle itſelf, we may call direct feebleneſs.

§ 107.

The extreme degree of the oppreſſed ſtate of the vital principle, when all external ſigns of life are wanting, is external or apparent death *(mors apparens)*. The principal vital functions are totally ſuppreſſed, or rather confined; the circulation of the blood, reſpiration, all the ſecretions neceſſary for life, all ſeparation and evacuation of things hurtful to the body, all abſorption, nouriſhment, and digeſtion, all ſenſation and re-action of the brain, as far as we are able to obſerve,

is

is totally gone; there is a general lameneſs of this power, an apparent ſtoppage of theſe functions, or rather, leſs activity.

§ 108.

There is alſo an apparent death of individual parts; as in lame members: the vital principle is not withdrawn; its activity only is confined; that is, the vital principle in theſe parts, is leſs active than what is neceſſary for the maintenance of life.

The moſt ſtriking inſtance of this apparent death, is produced by the effects of froſt.

§ 109.

There are, however, a great many other inferior degrees of the confined ſtate of the vital principle in the whole body, as well as in ſingle parts. To this head belong all irritation from diſeaſe, which has a particular action on the vital principle; and in general all cauſes which exhauſt irritability, muſcular power, &c. The conſequences are feebleneſs. Thoſe recently cured of ſevere diſeaſes may here ſerve as an example.

Such a ſtate may exiſt where the greateſt poſſible quantity of the vital power is preſent. This may be ſeen by the effects of fear, the conſequences of which are ſudden rigidity, immobility, and inſenſibility.

§ 110.

We muſt not confound this ſtate with an abſolute want of the vital principle; becauſe here reparation of the loſt powers, and a return of the loſt ſuſceptibility of irritation, is poſſible. This return is reſtoration of health.

§ 111. This

§ 111.

This ſtate of indirect feeble life may, however, paſs into an actual loſs of life.

a) By its duration; as for example, in apparent death, when drowned perſons have remained a long time in the water. It has never yet been determined, with ſufficient accuracy, how long ſuch a ſtate can continue; but we know that apparent death, from the effects of cold, continues longer than that from any other cauſe.

b) By deranging the organization, and deſtroying its ſuſceptibility of irritation, ſo that its connection with the vital principle is diſſolved, and the chemical powers begin to exerciſe their free unconfined activity.

c) By being improperly treated; this is the caſe when attention is not paid to the relation between the ſtimulants to be employed, and the ſuſceptibility of irritation; and when the vital principle itſelf is deſtroyed by too violent ſtimulants, as ſometimes happens in caſes of apparent death. Alſo, when external ſtimulants are withdrawn from the vital principle, and when ſufficient warmth is not employed, &c.

§ 112.

Sometimes this ſtate of indirect feebleneſs, paſſes into the ſtate of a deficiency of the vital principle, ſo that the vital principle is in part withdrawn from the body. Hence, in many diſeaſes, a complete cure is impoſſible. This obſervation is well illuſtrated by the diſeaſes of individual organs; as when after diſeaſes of the eyes, incurable defects of ſight ſtill remain. The changes effected in the organic admix-

ture

ture by diſeaſe are ſo great, that the original relation of the organic component parts cannot be reſtored; and, conſequently, the full influence of the vital principle can no longer exerciſe its action.

§ 113.

In ſuch a ſtate, the organization has in genera ſuffered either

a) By derangement and injury; for example, by external violence.

b) By the loſs of ſuſceptibility for the action of the vital principle. I allude to that caſe where this ſuſceptibility is irrecoverably gone.

§ 114.

3. IRREGULAR ACTIVITY OF THE VITAL PRINCIPLE.

The vital principle is deranged in its action by many ſtimulants; and hence the equilibrium of health is deſtroyed, and feebleneſs produced. By theſe means ariſe,

a) An unequal diſtribution of the vital principle, when one organ has too much of it, and another too little; as when there is an immoderate activity of the organs of the ſoul, by which the other organs ſuffer. Hence too violent ſtraining of the powers of thought, produce a weakneſs of digeſtion. We find alſo that this unequal diſtribution or action of the vital principle, in individual ſyſtems, is connected with injury to the other ſyſtems of the body; as for example, immoderate excitability of the organs of the ſkin, when a great part of the ſecreted juices is carried off by perſpiration, as in the Engliſh diſeaſe called the

the ſweating ſickneſs. We have another inſtance of this kind in the diabetes mellitus.

The conſequence of irregular action of the vital power, is diſeaſe.

b) UNEQUAL ACTION OF THE VITAL PRINCIPLE.

When extraordinary tenſion takes place alternately with reſt and relaxation; as for example, when a ſedentary life is followed by ſudden and exceſſive bodily motion; by which means the harmony of the whole is deſtroyed; individual organs are excluſively waſted, and weakneſs and debility enſue.

c) The degree of the ACTIVITY OF THE VITAL PRINCIPLE, comes here alſo into conſideration.

α) IMMODERATE EXCESSIVE ACTIVITY; by which means the organization is at length worn out; its fitneſs for being acted upon by the vital principle is blunted, and ſuſceptibility of irritation is loſt. This activity is immoderate, when it is entirely diſproportioned to the reparation; when the powers are conſumed faſter than they can be repaired, or, at leaſt, are waſted in a greater degree than reparation is poſſible. The natural conſequence is feebleneſs and diſeaſe. Thoſe organs expoſed to immoderate ſtraining, are particularly affected. Of this we have an example in immoderate fatigue by violent exerciſe.

§ 115.

The conſequences of ſuch immoderate activity of the vital principle are the more dangerous, as they tend to exhauſt life itſelf.

1. When the chief organs of life are immoderately exerciſed; as by too great exertion of the powers of thought, exceſſive ſtraining of the lungs, &c. and hence

hence the danger of aſthma by repeated over-ſtraining of the lungs, through ſtrong breathing, and many other functions of the body.

2. When ſeveral organs are overſtrained at the ſame time; as too great exertion of the thinking faculty, connected with immoderate exertion of the bodily powers; or exerciſe of the powers of thought, and the powers of digeſtion, at the ſame time. Hence it is exceedingly pernicious to ſtudy immediately after meals.

β) Too weak activity of the vital principle.

When there is not a ſufficient action of the animating principle on the organization, and conſequently a want of re-action.

The feebleneſs thence ariſing, is increaſed when the action has a preponderance; as when the weak vital principle is acted upon by too violent ſtimulants. In ſuch a ſtate excitability is ſometimes wanting; the vital principle is oppreſſed, and the too violent effect of the ſtimulants expel it from the body, before they can call it into action. In caſes of extreme feebleneſs, therefore, great precaution muſt be uſed in employing ſtrong ſtimulants.

§ 116.

Too great or too little activity of the vital principle, depends either on the general conſtitution of the organization, and is in ſome meaſure original; or is a conſequence of a want of the neceſſary excitement (Brown's direct debility) as well as of too violent excitement.

§ 117.

4. Defective constitution of the organization.

This

This is an important cauſe of the aſthenic ſtate, as by this circumſtance the free manifeſtation of the vital principle is partly impeded, and partly wrong directed. In this remark, we take into conſideration both the ſolids and fluids of the body.

To this head, belongs a weak or ſtrong coheſion of the component parts. The action of the vital principle, is very different on a ſolid fibre from what it is on a relaxed one. The feebleneſs of childhood is, for the moſt part, the conſequence of relaxed fibres. The action of the vital principle, as well as that of ſtimulants, on the organic parts, is modified according to this ſtate of the organization. Alſo great ſoftneſs and want of extenſibility in the fibres. Hence the different degrees of increaſed ſuſceptibility of irritation.

§ 118.

With ſuch a defective organization, a great deal of vital ptinciple may be preſent; but the organic fibres want coheſion, conſequently ſtrength and muſcular power, as is the caſe in children. On the other hand, where the coheſion of the fibres is ſtronger, there will be an equal relation between the vital principle and ſuſceptibility of irritation.

§ 119.

To this head belongs alſo the conſtitution of the fluids, both in regard to their conſiſtence and admixture: thin aqueous blood, deſtitute of animated parts; whether we here underſtand parts ſubject to the influence of the vital power, or thoſe particles peculiar to the blood, which make it fit for its deſtination in an organized body; for example, the oxygen of modern

dern chemiſtry. Something depends alſo on the greater or leſs quantity which the juices have of caloric, oxygen, or carbon. The want of theſe component parts of our juices, which are capable of an intimate connection with the vital principle, is the cauſe of a defect in the diſtribution of the vital power in our bodies.

The different degrees of that relation which ſubſiſts between the individual component parts of the juices, ought alſo to be remarked. According as this relation is equal or unequal, the action of the vital principle on the fluid parts, and the ſuſceptibility of theſe parts for that principle, are modified. To the ſame head belong the quantity of the fluids; a want or ſuperfluity of juices; though in the laſt caſe we admit rather an unequal diſtribution, or local accumulation of the juices.

STIMULANTS AS NECESSARY CONDITIONS OF LIFE.

§ 120.

The neceſſary conditions for the maintenance of life are STIMULANTS. Under this term is underſtood every thing that contributes by its agency to our exiſtence. But we muſt not comprehend under this head only thoſe things that occaſion contraction or pain, but AGENTS in general. Life is excited by the vital principle, as the fundamental cauſe of its exiſtence; but certain relations are neceſſary. By theſe relations life is in a continual ſtate of action and re-action. Without continued action and re-action, there can be no life.

We diſtinguiſh ſtimulants into external and internal. Among the former are air, heat, light, animal nouriſhment,

ment, &c.; among the latter the power of thought, the blood, &c.

On the relation of these stimulants to the vital power, depends the strength or feebleness of the manifestations of that power, according as it is more or less impeded by their agency.

§ 121.

In regard to vital feebleness we observe the following causes:

1) WANT OF SUFFICIENT EXCITEMENT FROM THESE STIMULANTS.

Hence arises Brown's direct feebleness. There may be various degrees of this want, yet they all depend on the indispensible necessity of stimulants for the support of life. A total privation of air, renders the continuance of life impossible. A partial withdrawing of heat, lessens the activity of the vital principle. Other stimulants, such as the passion of anger, occasion an irregular activity of the vital principle. All these cases give feeble life.

§ 122.

We must, however, distinguish from the above, the want of those stimulants to which people have been accustomed. These also are the cause of feebleness; as for example, the uneasiness after leaving off old habits.

Thus brandy drinkers find themselves indisposed, when deprived of the usual allowance of their favourite liquor.

§ 123.

Feebleness and feeble life arise also from a want of INTERNAL EXCITEMENT, whether it be indispensibly necessary,

neceſſary, or the effect only of habit. Hence feebleneſs, from a ſlow circulation of the blood, or from a want of oxygen in the blood; alſo that feebleneſs which ariſes, when people who labour a great deal with the head, paſs to a ſtate of mental inactivity. In the like manner labour and activity are neceſſary requiſites, ſo that people cannot be a moment idle; and languor brings on the moſt dangerous diſeaſes.

§ 124.

This feebleneſs, from a want of excitement, is either total, or tranſitory and capable of being repaired.

§ 125.

It is irreparable, when the fitneſs of the organization for being acted upon by the vital principle is loſt; or when the ſtimulants themſelves cannot be renewed. In both caſes, man never again attains to his former vital ſtrength. Unfitneſs of the organization for being acted upon by the vital principle, we obſerve in extreme old age; feebleneſs, from an irreparable want of ſtimulants, ariſes, for example, when people who have been accuſtomed to live in pure ſound air, are removed to low marſhy diſtricts.

§ 126.

Vital feebleneſs can, however, be removed, when the ſuſceptibility of the organization for being acted upon by ſtimulants is merely oppreſſed; as is the caſe in regard to fatigue, weakneſs from hunger, &c.; or when the abſent ſtimulants can be ſupplied, which is the caſe chiefly in regard to thoſe ſtimulants which have become neceſſary through habit.

2. TOO VIOLENT EXCITEMENT.

§ 127.

A muſcle which has been put into too violent action, becomes at length relaxed, and loſes its mobility. The caſe is the ſame with the whole organized ſyſtem. Too violent ſtimulants are prejudicial two ways:

a) By producing too great activity of the vital principle, which wears out the organization. There ariſes too violent an activity of all the bodily functions, the ſecretions and excretions, the nervous and lymphatic ſyſtems; and hence many irregularities and diſeaſes in the phyſical nature of the body, obſtructions and congeſtions, and particularly an immoderate irritability; in a word, quick and feeble life. This is the caſe with brandy drinkers, immoderate drinkers of coffee.

b) By weakening and deſtroying the organization; as heating liquors, poiſons which attack the ſtomach and other ſyſtems.

§ 128.

The immediate conſequences of immoderate excitement, are:

1. On the BLOOD VESSELS, violent circulation of the blood, and conſequently accumulations and obſtructions in individual parts.

2. On the lymphatic ſyſtem, immoderate activity in the buſineſs of abſorption and ſecretion, aſſimilation and nutrition.

3. On the powers of digeſtion, too ſpeedy untimely digeſtion; and therefore imperfect nouriſhment and corruption

corruption of the juices. This is the caſe when people expoſe themſelves to too violent motion after meals.

4. On the muſcular powers, by too violent motion or overſtraining the muſcles, by which rigidity and hebetude are occaſioned.

5. On the nervous ſyſtem. All ſtimulants have a final action, either mediately or immediately, on the nerves, ſome in a ſtronger, others in a weaker degree. The conſequence is immoderate irritability, ſenſibility, and nervous weakneſs.

6. On the powers of thought, by the paſſions, or by too great exertion of the mind. The conſequence is immoderate ſenſibility, in regard to impreſſions on the organs of the ſoul.

§ 129.

The conſequence, in general, of too violent excitement, when of the firſt or extreme degree, is deſtruction of the ſuſceptibility of irritation. This is effected by too ſtrong electric ſhocks, conveyed through the heart, which deprive the heart of this ſuſceptibility in a moment. In the ſecond place, when of a lower degree, it produces violent irritability, uncommon ſenſibility, and great mobility: the cauſes are mental and muſcular ſtimulants. The conſequences thence ariſing are flaccidity and relaxation, ſluggiſhneſs, and weakneſs of irritability; ſo that a ſtronger degree of excitement is required to produce the neceſſary effects; and theſe ſymptoms are followed by hebetude, inſenſibility, immobility, and rigidity: ſuſceptibility of impreſſions from ſtimulants, and all fitneſs of the organization for the vital principle, are loſt.

§ 130.

3. TOO WEAK EXCITEMENT ariſes, either,

a) From the ſtimulants being too weak; and, on account of their nature, not ſufficiently powerful to make an impreſſion on the ſyſtem: as for example; changes totally imperceptible,

b) Or from their not having ſufficient action, on account of ſome defect in the conſtitution.

§ 131.

A great deal here depends on ſome peculiarity in the conſtitution, either natural or accidental. Thus many perſons can bear a much greater quantity of ſtrong liquor than others.

§ 132.

The general conſequence of too weak excitement is feebleneſs. This feebleneſs ariſes from the inactivity of the powers. Every individual part of our body, and each ſeparate ſyſtem and organ, if leſs uſed, becomes weaker than the reſt, which are kept in a ſtate of activity. Hence the weakneſs of the left hand; and hence alſo a weak power of digeſtion, when the food is too delicate and light. This holds good even in regard to the whole ſyſtem. A certain exerciſe and activity are required to call forth ſuſceptibility, and to ſtrengthen the powers; but for maintaining the powers continued exerciſe is neceſſary. When the uſual exerciſe is intermitted, weakneſs ſoon follows. This holds good in general, as well as in regard to individual organs and ſyſtems. Hence the muſcular weakneſs of people who have been long confined to bed.

§ 133. On

§ 133.

On account of the connection of the whole human ſyſtem, external activity is neceſſary to excite and maintain the internal. For the truth of this obſervation, we need only pay attention to the relation between the digeſtive faculty and bodily motion.

§ 134.

Exerciſe of the powers is an excellent and neceſſary ſtrengthener; but it muſt be continued only in a certain degree, and for a determinate period, if we wiſh it not to occaſion too violent excitement, and conſequently to become pernicious.

§ 135.

4. Too long continued excitement.

Even weaker excitement, by being continued too long without interruption, occaſions weakneſs alſo, partly by its leaving nature no time for reparation, partly by increaſing too much the activity of the vital principle, and conſequently irritability, by which the organization is waſted. What before excited a higher degree of power, now produces feebleneſs.

§ 136.

The feebleneſs which enſues from too long continued excitement, is often incurable; it is the worſt kind of feebleneſs, as ſuſceptibility of irritation in the organization has been deſtroyed, as it were, by a ſecret poiſon. This cauſe gives riſe to the moſt tedious and incurable diſeaſes; it is a principal cauſe of conſumption. Hence we may account for the

conſequences of poiſoning with lead continuing a whole year.

§ 137.

5. IRREGULAR EXCITEMENT.

a) Its degree ariſing from ſtimulants ſpeedily changed in ſucceſſion, when the ſtimulants have a ſtrong, and ſometimes a weak action on the body. Thus feebleneſs ariſes as the conſequence of a reſtleſs, unſteady life.

b) The effects of contrary ſtimulants, ſuch as heat and cold, following each other ſpeedily. Thus external parts, as the ſkin, are deſtroyed by waſhing with warm water after they have been expoſed to great cold; the enamel of the teeth is deſtroyed by the uſe of cold and hot food after each other, and even internal parts experience the ſame thing, as in the caſe of inflammation of the ſtomach, occaſioned by drinking cold liquor when over-heated.

c) Stimulants which act in an unequal manner; that is, ſtimulants which have a ſtrong action on one organ or ſyſtem, and a weak action on another: for example, the unequal preſſure of water in the bath. Hence the prejudicial influence of a warm bath, which admits only one half of the body, while the other is expoſed to cold.

To this head belongs excluſively ſtrong excitement of a ſingle organ or ſyſtem; as the organs of thought, the ſtomach; the immoderate uſe of food when in a ſtate of great reſt. This excluſive excitement is particularly hurtful when too ſtrong.

Wherever there is excitement, there is always a determination of the juices thither. When the excitement is too violent, this determination becomes too ſtrong, produces congeſtions, and not only weakens individual

individual parts, on which it acts, but alſo the whole body, as it is deprived of the neceſſary juices. Injudicious and exceſſive bleeding is attended with this injury, and alſo long continued and immoderate artificial evacuation by ſtool.

§ 138.

All theſe deviations from that degree of excitement neceſſary for maintaining life, are naturally attended with changes in the vital functions. But beſides difference of conſtitution, there is another cauſe, which prevents them from producing an effect on the ſyſtem proportioned to their degree; and that is HABIT.

§ 139.

Stimulants long continued, loſe at laſt their activity, ſo that they excite either a diſproportioned re-action, or no re-action at all. This is occaſioned,

1. BY WEAKENED STIMULANTS. Too violent ſtimulants, particularly thoſe of the higheſt degree, are never overcome by the force of habit, eſpecially when they are of a nature contrary to our previous condition; ſuch as a ſpeedy tranſition from heat to cold. This will be illuſtrated in § 143. On the other hand, we are ſoon accuſtomed to endure the effects of moderate ſtimulants of a contrary nature, ſuch as ſlight changes of the weather.

2. BY STIMULANTS, THE DEGREE OF WHICH IS GRADUALLY INCREASED. By theſe means we are at length accuſtomed to exceedingly ſtrong excitement. Hence there have been people who could actually ſwallow poiſon. In the ſame manner we accuſtom ourſelves to hard labour, and to bear and lift up large burthens.

3. THE NATURE OF THE CONSTITUTION, the ſolidity and durability of the organs, and the ſtrength and elaſticity of the fibres, muſt in particular be taken into conſideration. Many violent ſtimulants are therefore overcome merely by a good conſtitution. Many hold out againſt the moſt obſtinate diſeaſes. This is what is called a good ſtate from nature. The ſolidity of the organized parts, and particularly their coheſion, withſtand the action of ſtimulants in ſuch a manner, that the ſtimulants as it were rebound, are incapable of making an impreſſion, and no re-action ariſes from their action, or at leaſt if there be any, it is weak and inſignificant, or the organization is ſufficiently ſolid to endure the conteſt between action and re-action. Thus ſtrong people withſtand the moſt inflammatory diſeaſes, and the inflammatory fever, treated according to the method of Sylvius.

ORGANIZATION AS A CONDITION OF LIFE.

§ 140.

THE STATE OF THE ORGANIZATION IS DIFFERENT,

1. ACCORDING TO THE DIFFERENT PERIODS OF LIFE.

In childhood we obſerve more elaſticity of the fibres, leſs reſiſtance to impreſſions, and leſs ſuceptibility of irritation. To be accuſtomed to any thing, therefore, is eaſieſt at this period; and it is poſſible for children to bear impreſſions which would be too much for a man. Hence it happens that the conſtitution of childhood can hold out under the ſevereſt diſeaſes, and hence a greater degree of feebleneſs and debility can take place in children, and life be

be ſtill preſent, than is poſſible in the conſtitution of manhood. By habit, continued from youth, the greateſt changes from heat to cold become ſupportable. In a word, childhood can be accuſtomed to things which could not be endured at any other period of life.

2. ACCORDING TO THE EXISTING DEGREE OF CAPACITY AND SUSCEPTIBILITY OF IRRITATION, and according alſo to the ſtate or tone of the organization.

Our organization, by the continual action of ſtimulants, is rendered capable of bearing impreſſions from thoſe which are exceedingly ſtrong, and which at laſt become habitual to us. In an exalted ſtate of ſtrength, the action of ſtrong ſtimulants either makes too little impreſſion on the ſyſtem, or our bodies are ſtrong enough to bear the conteſt between violent action and and re-action. This will in particular be the caſe, when the ſtimulants are not ſuch as injure the body mechanically, as burning, and the like, &c. In ſuch a ſtate, ſenſibility and ſuſceptibility of irritation are greatly leſſened. When our attention is earneſtly fixed on any object, it ſometimes happens that we are not diſturbed by the loudeſt noiſe; and hence the *noli turbare circulos meos* of Archimedes *. In the exalted ſtate, produced by opium or wine, thoſe violent ſtimulants, the moſt painful impreſſions, are not felt. This inſenſibility does not ariſe from a ſtronger

* When Syracuſe was taken by Marcellus, Archimedes was ſo intent on the demonſtration of a geometrical problem, that he heard nothing of the noiſe occaſioned by the aſſault. When one of the Roman ſoldiers, who found him in that ſtate, wiſhed to carry him to the conſul, he ſaid coolly, wait a little, and my problem will be finiſhed. T.

ſtimulant

ſtimulant deſtroying a weaker; but from the exalted organic tone, which is occaſioned by one ſtimulant. In a practical view this obſervation is of importance, and teaches us, by producing ſuch a ſtate, to avert the pernicious effects of a violent or even mortal irritation from diſeaſe.

§ 141.

It is to be remarked, that by often exciting ſuch an exalted ſtate, and the ſimultaneous employment each time of a ſtrong ſtimulant, power is at length acquired of bearing violent irritation, even when that ſtate does not exiſt. Thoſe who have accuſtomed themſelves to think, amidſt noiſe, obtain, at length, great firmneſs of the organs of thought. In this manner certain things become habitual to us.

§ 142.

On the other hand the irritability of the organization may be ſo leſſened, that the re-action to the ſtimulant becomes too weak; and this may be PERIODICAL, or peculiar to certain times. Such a weakneſs is produced by fear and care, exceſſive evacuation of every kind, &c. In this depreſſed ſtate man is not capable of bearing ſtrong excitement, and even that to which he was before accuſtomed. Thus a ſmall quantity of wine, which at other times does us no hurt, will, during ſuch a feeble ſtate, produce intoxication.

HABIT.

§ 143.

Man, it is ſaid, can be accuſtomed to every thing; and even the ſoul as well as the body, learns, by habit,

to

to bear the moſt pernicious things. But people muſt beware of confiding too much in habit, and of ſacrificing their life and health to it imprudently. Habit cannot change the nature of pernicious things, and render them healthful. Poiſon will always be poiſon, even when it is uſed as daily food. The foul air of jails always weakens life, even though the unfortunate priſoner may have breathed it for years. Habit only deſtroys the ſenſibility and ſuſceptibility of irritation againſt their diſagreeable effects; but it does not prevent their pernicious influence on the ſyſtem. The ſenſibility for pain is blunted; but the effect of ſtimulants, which excite pain, is not obviated. Habit only makes us not immediately feel the bad effects of pernicious things; but the conſequences break out later, and for that reaſon are often the more dangerous. Of this we have a ſtriking inſtance in the poiſon of lead. What an important warning againſt that inconſideration, with which young perſons abandon themſelves to pernicious things and habits.

§ 144.

Such pernicious habits are ſometimes attended with no bad conſequences, as long as the organization is in an exalted ſtate, or as long as the powers are not weakened. The vital principle is preſent in ſufficient quantity not to be immediately exhauſted by excitement, and the body is ſtrong enough to withſtand the influence of the deſtructive powers. Thus the diſſipated youth ſuffers ſometimes very little from the pernicious effects of the moſt horrid poiſon, conveyed into the ſyſtem by diſeaſe; but the evil often breaks out at a later period.

§ 145. As

§ 145.

As long as the ſtate of the organization continues the ſame as that during which we were ſubject to the action of ſome pernicious ſtimulant, we ſometimes diſcover no traces of its effects; but as ſoon as this ſtate is removed by a change of circumſtances, the conſequences of the pernicious ſtimulant begin to appear. As long as the hero remains on the field of battle, he feels no pain from the moſt horrid wound that can be inflicted; he continues to combat with bravery, and does not find his ſpirits begin to ſink till he diſcovers the danger of death to which he is expoſed. The poiſon of diſeaſe may remain long concealed in the body, as it is prevented from manifeſting itſelf by certain counter-ſtimulants; but it ſoon begins to exerciſe its influence, either when the counter-ſtimulants which ſuppreſſed it ceaſe to act, or when, by the effects of violent excitement, the counteracting power of the counter-ſtimulant is deſtroyed. Workmen in white lead-works ſometimes retard the effects of the poiſon of the lead by the uſe of fat ſubſtances; but theſe do not entirely prevent the poiſon from acting on the body, and the ſymptoms break out when they lay aſide the uſe of that food.

§ 146.

Habit, however, can at any rate impede the influence of pernicious things, and it particularly enables us to bear things which in certain degrees are not hurtful, ſuch as violent heat and cold. Habit deſtroys re-action and ſtrengthens the fibres. But the whole depends partly on the nature and degree of the excitement,

excitement, and partly on the ſtate of the vital principle and organization, and in the laſt place on external ſtimulants.

EXPLANATION OF THE TERM *LIFE.*

§ 147.

Life is not a ſtate of reſt, but of inceſſant operation. The moſt perfect *perpetuum mobile*, a continual circulation of action and being, a compound of working powers maintained by one principle for one end. Every thing bodily in man is ſubjected to changes and alternations; every thing on which the vital principle exerciſes its action, is in a continual alternation of increaſe and decreaſe, of loſs and reparation, of growing old, renovation and reſtoration. Scarcely have a few years elapſed when our ſubſtance, in regard to the bodily part, is entirely renewed, and as it were again created from the ſurrounding elements. The vital principle animaliſes every thing ſubject to the influence of its action, and converts it into organized parts of our bodies. The nouriſhment which we uſe is treated in this manner by the vital chemical proceſſes, and the ſame is the caſe with all the ſubſtances of the ſurrounding world which have the power of acting on our bodies. Here we can obſerve the peculiarity of the vital principle, which eſtabliſhes a difference between it and all other powers.

§ 148.

Life conſiſts in inceſſant action and re-action, excitement and re-excitement. The more uninterrupted and equal the relation between action and re-action, the freer is the operation of the vital principle in man, and

and the greater the ſum of vitality and health. In ſuch a ſtate man lives the moſt perfect life.

§ 149.

Every deviation from this ſtate of relation approaches more or leſs to feebleneſs and diſeaſe. This deviation is occaſioned in the following ways:

a) BY WEAK ACTION AND RE-ACTION. In this ſtate life, notwithſtanding feebleneſs, may continue a long time, provided the action does not acquire a preponderance.

b) BY STRONG ACTION AND WEAK RE-ACTION. This is the caſe in regard to the effects produced by fear, anger, or any other paſſion, on the ſyſtem, if it has been before reduced to a ſtate of great debility. Such a depreſſion and inability to withſtand ſtrong impreſſions, end ſooner or later in the total extinction of life.

c) BY STRONG RE-ACTION AND WEAK ACTION. In ſuch a ſtate there is an immoderate degree of irritability, ſenſibility, mobility, and diſpoſition to ſpaſmodic affections. Nature ſinks under the too violent activity of the vital principle, which wears out the organization.

d) BY STRONG ACTION AND STRONG RE-ACTION. This takes place in the higheſt degree of health; ſuch as that enjoyed by the ancient Athletæ, who followed a very dangerous occupation. As long as a man poſſeſſes health, with ſuch an equal relation between vital action and re-action, he is a giant in ſtrength, and indeed his nature requires this ſtrength to withſtand the conteſt between irritation of diſeaſe and the action of the vital principle, which in ſuch a ſtate is exceedingly

ingly ſtrong; and by unbracing the powers ſubject to it deſtroys the health.

§ 150.

In conſidering life, we keep in view the following momenta, viz., the ſtate of the vital principle and of the organization, as well as the nature of the ſtimulants by which it is affected. Every deviation from this uſual ſtate, and from the uſual relation between theſe principal momenta of life is feebleneſs, which, according as the deviation is greater or leſs, becomes infirmity, and at length diſeaſe.

§ 151.

A ſtill unexpanded life, where theſe principal momenta are not in full action, is imperfect feeble life.

This want of expanſion is either general, or relates to individual ſyſtems or organs. Life in childhood, not completely expanded, is feeble and imperfect.

Expanſion in man proceeds by degrees from the period when a child begins to walk, till that of death. Nature is firſt employed in the formation of the principal organs, until ſhe has finiſhed the plaſtic buſineſs of expanſion at the time of complete manhood. She then labours rather intenſively than extenſively. Expanſion after this period relates merely to conformation, and to changing and maintaining the equilibrium between the powers.

§ 152.

The conformation of individual organs is more or leſs retarded, the organs are expanded ſooner or later, and in a greater or leſs degree.

This

This imperfection and feebleneſs of life depend,

1. ON THE WEAKNESS OF THE VITAL PRINCIPLE.

2. ON THE ORGANIZATION BEING UNFINISHED AND NOT COMPLETELY FORMED. Individual organic parts may be wanting, as in embryos; theſe parts may not be brought to full conformation, as in men born with mutilations, or they are not formed till a future period, as is the caſe with the teeth.

3. ON THE INEFFICACY OR INACTIVITY OF STIMULANTS. Thus the life of a child remains feeble, if deprived of the uſe of pure freſh air.

§ 153.

All theſe momenta form the aſthenic conſtitution, or feebleneſs, debility, infirmity, and feeble life. This ſtate is either,

a) INCREASING, as in the commencement of diſeaſe, or, in general, in the ſtate of diſpoſition to diſeaſe.

b) DECREASING, as in the ſtate of convaleſcence.

§ 154.

FEEBLENESS is:

a) GENERAL, that is diffuſed throughout the whole ſyſtem. In that caſe it forms properly the aſthenic conſtitution.

b) LOCAL, that is, relates only to individual parts, as weakneſs of the eyes. In this caſe other organs ſuffer along with the feeble organ, according to the connection which ſubſiſts between them, or the whole ſyſtem is attacked. By way of illuſtration I ſhall mention only diſeaſes of the lungs, or inflammation of the eyes.

In

In both theſe caſes the local feebleneſs is communicated to the whole frame.

Care muſt be taken to make an accurate diſtinction between general feebleneſs and that which is merely local. In the latter caſe individual organs particularly ſuffer, as the rectum in the flux. In a practical view this is of great importance, as ſymptoms and diſeaſes are often confounded.

§ 155.

The aſthenic ſtate diſtinguiſhes itſelf by immoderate irritability, or hebetude and relaxation.

§ 156.

1. IRRITABILITY, IMMODERATE SENSIBILITY IN REGARD TO STIMULANTS, and therefore diſproportioned ſtrong re-action to weaker action, a great deal of ſenſation, ſo that the leaſt ſtimulant produces the moſt violent movements.

Of this ſtate there are a great many degrees. It may proceed ſo far, that the moſt violent effects follow from the common action of things around us. A mere breath of cold air occaſions, among the negro children, convulſive movements of the mouth. It is the ſtate of tenſion and ſpaſms.

§ 157.

INSENSIBILITY AND HEBETUDE.

This ſtate takes place:

a) When SUSCEPTIBILITY OF IRRITATION IS NATURALLY WANTING. This is not always a ſymptom of actual feeble life, but may exiſt where the vital power is in full vigour. We diſtinguiſh a great many degrees of this want of ſenſation. When it exiſts

in a certain degree, and relates only to certain ſtimulants, it may be rather an indication of great vital ſtrength. Thus the humble ruſtic, who never quits his country life, is happy that he has no craving deſire for many delicacies and many objects of luxury, which is a diſeaſed ſtate, the conſequence of unnatural habits. Re-action keeps action in perfect equilibrium, ſo that it is no longer perceptible. Thus the ſtrong robuſt man of nature, is not ſenſible of thoſe rapid changes of weather which throw the inhabitant of the town into a fever. A great deal here depends on the nature of the ſtimulants which act on the ſyſtem.

b) WHEN WANT OF SENSATION HAS BECOME HABITUAL. Here alſo there is not always real feebleneſs, but rather inſenſibility to ſtimulants, acquired by hardening.

c) BY HEBETUDE FROM THE IMMODERATE OR TOO LONG USE OF AN ORGAN, as is particularly the caſe in regard to the face. This hebetude is real feebleneſs. In general, it is the feebleneſs of age.

§ 158.

3. RELAXATION.

Relaxation, ſoftneſs, atonia is,

a) NATURAL, as in childhood.

b) EXCITED, the conſequence of too great activity and immoderate tenſion, or of relaxing means. Such a ſtate of relaxation is either tranſitory, for example, after ſevere labour; or continual, and at length irreparable, as in old people, who have overſtrained the organs of thought.

This relaxation, or atonia, manifeſts itſelf in the muſcular

muſcular fibres of the ſtomach and bowels, and hence accumulations of ſlimy matter and impurities.

Irritability, inſenſibility, and relaxation, may be combined in one ſubject, and render the aſthenic conſtitution more complete. Hence the many contradictory phenomena in human nature. One of the chief conſequences of this ſtate is ſpaſms, the principal cauſe of which is irregular re-action.

§ 159.

The aſthenic conſtitution manifeſts itſelf by the following phenomena, both in regard to the internal and the external functions: Incapacity for ſevere labour, unfitneſs for every thing that requires a certain degree of activity, difficulty in the ſpiritual and phyſical operations; laſſitude ſoon and eaſily occaſioned after a ſmall exertion of the powers, which in the ſound ſtate could be made with the greateſt eaſe, and without any inconvenience; a ſenſation of wearineſs, oppreſſion, heavineſs of the limbs, and weakneſs; exceſſive ſenſibility and irritability in regard to impreſſions either on the mind or body. The ſmalleſt change and deviation from cuſtom produces the moſt ſtriking effects. The mind is violently agitated by all the paſſions, of which it becomes exceedingly ſuſceptible; they are excited by the ſlighteſt cauſe. Thus the ſmalleſt degree of fear produces the moſt violent effects, and the leaſt cauſe is ſufficient to excite it. The effects of anger are likewiſe exceedingly violent on a feeble mind. Phyſical ſtimulants make alſo an uncommon impreſſion: acute pains and violent ſpaſms are excited by the ſlighteſt cauſes. This is a continued feveriſh ſtate, an inceſſant ſtruggle between

action and re-action: the physical and animal functions of life are deranged, and there arise congestions, contraction of the vessels, unequal activity of the vital principle in individual organs, and a quick alternation of tension and relaxation. Sometimes the appearance of the most perfect health, and the highest degree of good spirits, extraordinary cheerfulness, vivacity and easiness under labour, but every thing braced in an immoderate degree. At other times the greatest depression and lowness of spirits; incapacity for labour, sluggishness in all the functions of the body; indigestion and weakness, which proceed to debility and death-like feebleness. Of a different kind, is that insensibility and hebetude, which are the consequence of great tension, and an exhausted state of the powers, when nature is so reduced that the system can be acted upon by no stimulants but those of an exceeding violent kind, as susceptibility of irritation is destroyed. We are acquainted with the different modifications of this state, but I shall call the reader's attention only to the two principal points: either the susceptibility of irritation is suppressed periodically, and the activity of the vital principle oppressed; and hence the highest degree of this feebleness in apparent death; or the susceptibility is more or less annihilated and exhausted, with an actual want of the vital principle, and consequently direct feebleness, as in great age.

§ 160.

The asthenic state is mere vegetable life; an imperfect existence, where life hangs as it were by a thread, which is broken by the least tension. The wretched sufferers drag about their enfeebled bodies

day after day, filled with anxious care for the preſervation of their exiſtence; and as it were in the ſight of death, which already has his ſcythe ſuſpended over their heads.

§ 161.

In the aſthenic ſtate great danger of diſeaſe is to be apprehended, both in regard to infection and the violence with which the diſeaſe acts.

The extraordinary irritability and ſenſibility of the organization makes it ſuſceptible, in the higheſt degree, of external impreſſions. Men in this ſtate will be ſoon infected by the poiſon of diſeaſe, even at a diſtance. The re-action is far too weak to withſtand morbid irritation; and the greater the irritability, a weak ſtimulant will not only act more ſpeedily, and be ſooner felt, but will alſo produce more violent movements.

Feeble perſons, therefore, ſuffer ſo much the more from diſeaſe; they are violently ſhaken, as it were, in the commencement; the few remaining powers are ſoon exhauſted, and re-action loſes ground in its conteſt with the action of the irritation produced by the diſeaſe. In ſuch a caſe, if the phyſician is not able to revive the re-action by artificial ſtimulants, death muſt ſoon enſue.

§ 162

Of a different nature is that aſthenia where there is great ſolidity of the organized parts of the body, elaſticity, extenſibility, and pliableneſs of the veſſels, and conſequently a ſtrong adherence of the vital principle. In this ſtate, notwithſtanding the unequal conteſt between action and re-action, and notwithſtanding the irregularity of the latter, and the feveriſh

affections and ſpaſms which follow, life ſtill continues. This ſtate becomes, at length, habit, and exceeds in duration the ſtruggle between diſeaſe and the vital principle, until the equilibrium is afterwards reſtored. This is effected both by natural and artificial ſtimulants, ſuitable regimen, proper attention to the ſtate of the patient, and by medicine. A great deal, however, depends on a good ſtate of the organs. With ſuch a ſtate the moſt inflammatory and violent diſeaſes may be withſtood. When the bodily powers begin to increaſe, we may always confide in the reſtoration of health. In this manner ſpaſmodic affections often diſappear after people have attained to full growth. In ſuch a ſtate, notwithſtanding the ſevereſt diſeaſes, much may be expected from the art of medicine. As this organization is particularly found in children, a little more attention to this circumſtance, in a practical point of view, might furniſh many hints for curing the diſeaſes of infancy. So many improper means would not be employed to deſtroy this organic conſtitution; as for example, too ſtrong ſtimulants.

§ 163.

The aſthenic ſtate is peculiar to childhood and old age, as well as to the female ſex.

Feebleneſs may be divided into two kinds:

1. NATURAL FEEBLENESS, as it exiſts in the caſes before mentioned. It is original, and proceeds from one generation to another by tranſmiſſion; it is the general form of diſeaſe; but it may take place alſo in the ſound ſtate, without being particularly connected with any infirmity. In this reſpect it is merely a

degree

degree of the conſtitution; an inferior degree of ſtrength: a relative term.

2. EXCITED FEEBLENESS, the conſequence of diſeaſe, or produced by the accidental effect of ſtimulants: as ſuch it diſtinguiſhes itſelf by all the ſymptoms of diſeaſe, and is a real morbid ſtate.

§ 164.

CHILDHOOD is the proper age of feebleneſs. The organization is not yet completely finiſhed; the vital principle is not able to exerciſe its free activity, and many organs are too far, while others are too little advanced in conformation; ſome organic parts do not yet exiſt; great ſoftneſs and relaxation prevail in the whole frame. There is a deficiency of muſcular power, and notwithſtanding the ſtrong action of the vital principle, there is a want alſo of the neceſſary coheſion. Senſibility and irritability exiſt in the higheſt degree; and impreſſions have a ſpeedy and eaſy action; but between the action and re-action there is too great a diſproportion.

§ 165.

The greateſt real ſtrength exiſts in a MIDDLE AGE, and at that period the beſt relation prevails between the vital principle, the organization, and excitement. Feebleneſs in this ſtate takes place only when the ſtimulants act too violently, and too inceſſantly, ſo that the re-action is not able to withſtand them. This, therefore, is in a particular manner excited feebleneſs.

§ 166.

GREAT AGE is a return to childhood, and is subject to feebleness from relaxation and hebetude. The vital principle begins to be inactive, and its free operation is impeded. There is even a want of the requisite quantity of the vital principle; the organization loses its fitness for the action of this principle, and also its irritability; stimulants either excite no re-action, or produce that effect only when employed in the highest degree. Re-action, though weak, is connected with great straining, by which the vital principle itself is exhausted. The natural consequence of the relation between the vital principle and the organization being destroyed, is a perceptible change in the solid and fluid parts of the body: the former are worn out; the fibres lose their sensibility, the vessels are contracted, and the soft parts become hard; the juices no longer participate in the vital principle, and they undergo changes in regard to their component parts. The functions of the mental organs are deranged in the same degree as those of body; each suffers alternately on account of their mutual connection. The consequences of all these changes may be observed in the phenomena of that disease which we call old age.

The feebleness of age takes a direction entirely opposite to that of the feebleness of childhood: the former creeps slowly and imperceptibly to extinction and the grave; but the latter rises to strength and perfect life. The feebleness of age exhibits the following phenomena: meagreness, trembling, coldness, weakness, unfitness for every labour, frailty of all the organs of motion, deficient digestion, slow and confined

fined circulation of the blood, corruption of the juices. The mental powers are equally weakened and blunted: hence loſs of memory, inſenſibility, peeviſhneſs, timidity. The ſenſes become dull, the ſight and hearing decreaſe, and the taſte and ſmell loſe their acuteneſs. The body refuſes to be ſubſervient to the mind, becomes helpleſs, heavy, abundant in earthy particles, and at length totally unfit for the habitation of a higher being.

§ 167.

The female ſex are denominated the weaker ſex; with what juſtice will be ſeen by the following obſervations: The grounds of their conſtitution is a high degree of atonia and relaxation, combined with a ſtill higher of irritability. They are violently affected by external ſtimulants; but their action is ſpeedy and tranſitory, on account of the elaſticity and pliableneſs of the fibres. Action is not ſufficiently withſtood by re-action. To theſe may be added the many ſufferings ariſing from the condition of the ſex, and the peculiar ſtructure of the female body, &c. In this reſpect ſtrong ſtimulants to the female ſex are dangerous. Woman, thy name is Weakneſs! Their organization, however, poſſeſſes a wonderful degree of ſolidity, extenſibility, and pliableneſs. For this reaſon the female ſex ſupport the greateſt ſufferings, and particularly thoſe of the mind, under which the male conſtitution would be totally oppreſſed: hence their great patience under pain. For the ſame reaſon they are able to withſtand the moſt dreadful diſeaſes; and impreſſions of the ſtrongeſt kind become habitual to them much ſooner than to the male ſex. The female ſex are ſooner tired in oppoſing an inſurmountable power than

the

the male ſex. After the laſt earthquake in Calabria, when the people were clearing away the ruins, the women were all found lying with their arms acroſs their breaſts, as a ſign that they had reſigned themſelves to deſpair and death, without entertaining any idea of exertion; but the men were found with their arms ſtretched out, which ſhewed that they had exerted themſelves to the laſt moment. This conſtitution of the organization, this perſevering power of enduring ſufferings, is rather a diſpoſition to ſtrength; but too violent ſtimulants, particularly ſudden emotions, ariſing from paſſion, are not ſo eaſily withſtood by this, ſo called, feeble ſex, when the irritability thereby excited is too violent to be oppoſed by the moſt intenſive organization.

§ 168.

The aſthenic ſtate manifeſts itſelf in a manner entirely peculiar at ſome periods of life, in which nature undergoes certain changes, when individual organs are formed, or differently modified. Theſe periods are called THE PERIODS OF EXPANSION. The whole life of man is a ſtate of expanſion, conformation, change, increaſe, and decreaſe; but at certain times we obſerve a particular activity and change in the living nature of man, which manifeſt themſelves by more or leſs ſtriking phenomena. This takes place,

1. IN THE PERIOD OF EXPANSION IN CHILDHOOD (commonly about the ſecond year). It is obſerved that children, for the moſt part, about this time, are feebler and more irritable than at others; that they are in an unnatural braced ſtate, uncommonly lively, or dejected and timid. Their bodily powers thereby ſuffer, they are ſoon tired by any exertion, and make

no

no progreſs in learning to walk. All theſe deviations again diſappear after a certain time.

2. PERIOD OF EXPANSION ABOUT THE SIXTH OR SEVENTH YEAR. This period is diſtinguiſhed by ſpeedy growth, and by a high degree of irritability and relaxation.

3. PERIOD OF EXPANSION ON ATTAINMENT TO MANHOOD. When the affections connected with this ſtate exiſt in a violent degree, the aſthenic form is exceedingly ſtriking. There is a deficiency of the uſual powers, and particularly great irritability and ſenſibility.

4. PERIOD OF EXPANSION IN OLD AGE, commonly about the fortieth or fiftieth year. This change is much more perceptible in the other ſex, and diſtinguiſhes itſelf by a ſuppreſſion of the menſes, which is ſometimes accompanied by very great ſuffering.

§ 169.

In the diſeaſed ſtate aſthenia, properly, conſtitutes the general form of the diſeaſe; for there can be no diſeaſe without feebleneſs; only the degrees of the feebleneſs are different, and their ſymptoms are more or leſs perceptible.

We make a diſtinction in diſeaſe between the ſtate of actual feebleneſs, accompanied with evident ſymptoms; and that deceptive ſtate of feebleneſs where there ſeems to be a higher degree of it than really exiſts. In the latter caſe there is rather an immoderate irritability, which muſt be leſſened.

§ 170.

The laſt diſeaſe of man that ends in death is the higheſt degree of feebleneſs. The cauſe of it lies in an

an actual decreaſe of the vital principle, by which means the deſtruction and decompoſition of the organization commence. This ſeparation of the dead from the animated begins in individual parts, even while the chief organs enjoy the influence of the vital principle. The heart ſtill beats when no pulſe is perceptible in the wriſt. But the commencement of the free action of the chemical powers in individual parts, no longer ſubject to the influence of the vital principle, is moſt perceptibly ſeen in the higheſt degree of the ſo called *hidroa*, as obſerved in France; a torpid rigidity of the limbs, by which the affected parts become gangrened, and fall in pieces from the living body: worms alſo are produced in the gangrened parts. People affected with this diſeaſe have been ſeen without legs or arms, and yet lived ſeveral weeks.

§ 171.

Aſthenia ends in death, when individual organs become ſo weakened that the harmony of the whole is deſtroyed, and that they can no longer perform their office. Thus death enſues from exceſſive bleeding; the organs are rendered lame and incapable of diſcharging their functions. This lameneſs may be general, or relate only to individual organs, ſo that one organ dies after another till they all become extinct in ſucceſſion.

CHAPTER III.

Symptoms of Feeble Life.

§ 172.

It is of great importance to be able to know the actual ſtate of feebleneſs, and to diſcover when it takes place. Sometimes the diſeaſe is concealed, and does not manifeſt itſelf by ſuch ſtriking affections as betray either a want, or a confined activity of the vital principle. Sometimes individual affections ſeem to indicate rather livelineſs and ſtrength. On the other hand, a total exhauſted ſtate of the powers ſeems to exiſt, though the patient may be ſtill endowed with ſufficient vital ſtrength. Pathologiſts ſpeak therefore of real and apparent feebleneſs. In order to avoid every dangerous miſtake of this kind, care muſt be taken not to judge of the ſtate of feebleneſs, or vital ſtrength, from individual affections, but from ſeveral taken together; from the whole condition of the patient, and the circumſtances of the diſeaſe, both paſt and preſent. There is no error in medicine attended with more melancholy conſequences, than forming a raſh opinion of a diſeaſe from mere ſymptoms, eſpecially if concluſions are drawn from individual affections. Diſeaſe is a ſtate which is formed not by tranſient phenomena, but by the whole condition of man, according to the nature of his conſtitution, and internal and external relations. In this point of view the common ſemeiotic is not ſufficient.

§ 173.

§ 173.

The principal points to which attention must be paid, in order to distinguish real from apparent feebleness, are:

1. PRECEDING CIRCUMSTANCES, which contained the cause of feebleness; debilitating causes. Thus, for example, we can conclude on real feebleness, when a person has been born of feeble parents, has received a debilitating education, or has been exposed to a great deal of fatigue, with bad nourishment.

2. Real feebleness ensues after chronic diseases, and particularly when connected with nervous weakness, and with evacuations.

3. THE DURATION OF THE ASTHENIC STATE indicates real feebleness. The longer the diseased state continues, the more does the organization lose its fitness for the action of the vital principle; and the influence of that principle on the organization is lessened.

4. The more the vital organs themselves suffer, the greater is the actual feebleness; as for example, when the brain and system of the nerves are injured, as in nervous fevers; or the lungs, in consumption. Such a state cannot long continue; general and real asthenia must ensue.

Real asthenia will be still better discovered by the following phenomena of feeble life in general.

§ 174.

I. SHORT VIEW OF THE PREVIOUS CAUSES AND CIRCUMSTANCES WHICH MAY PRODUCE FEEBLENESS.

Under

Under this head may be claſſed feeble parents, bad nouriſhment, want of exerciſe, and free air; frequent and tedious diſeaſe, reſtleſs diſpoſition of mind, a great deal of fatigue, depreſſing paſſions, care, ſorrow, &c. When theſe and other circumſtances are found united, we may with certainty conclude on the aſthenic ſtate exiſting (§. 215.) We muſt not, however, conclude too raſhly from individual ſymptoms. In a man who has the ſthenic prediſpoſition, tranſient anxiety, or fatigue, will not immediately produce aſthenia.

To this head belong alſo all general debilitating cauſes, which produce general feebleneſs in ſeveral men at the ſame time who live in a certain place, or at a certain period (§ 236.); as for example, an unhealthful climate, like that of Batavia; unhealthful habitations; the pernicious accumulation of a great many people in large cities; corruption of the air of every kind; and, in the laſt place, mode of life, luxury, and inconſiderate rage for faſhion, with all the evident conſequences that thence enſue.

§ 175.

II. External state.

1. A prediſpoſition to feebleneſs may be diſcovered even in the form of the body. An uncommonly large head, a long neck, thin projecting ſhoulders, a narrow depreſſed cheſt, crooked ſpine.

2. A ſwelled bloated face, an uncommonly tender tranſparent ſkin, the pupil of the eye much dilated.

3. A pale complexion. Every kind of paleneſs, however, does not indicate a feeble conſtitution, but an earth-coloured dirty paleneſs, which gives the face a diſeaſed

a diſeaſed, diſmal, and melancholy appearance, while the furrows cannot be expanded into cheerfulneſs without apparent labour. Fair hair is conſidered as a greater ſign of feebleneſs than dark.

4. Soft flabby fleſh, which readily yields to any impreſſion. An unequal tenſion of the muſcles, cavities, and high parts, are externally obſerved in various parts of the body. The flabbineſs of the muſcles on the extremities is particularly perceptible.

5. When ulcers become dry and pale. Kortum gives it as a ſign of the aſthenic ſtate, when, during the fever of the ſmall pox, the inoculated puſtules become pale-red, and as it were grow whitiſh *.

6. The whole body has a ſolid jolly appearance, but on nearer inſpection the fleſh is obſerved to be ſwelled. The ſkin appears to be as it were puffed up.

7. When the noſe, the hands, and the feet, become ſpeedily cold from ſlight cauſes.

8. Immoderate corpulency, eſpecially when it ſpeedily increaſes, and is connected with relaxation of the muſcles; ſoft ſpongy fleſh, and a ſickly pale complexion; but particularly when the patients are ſubject to continual ſhivering.

9. Extenuation, however, is in general conſidered as a more certain ſign of feebleneſs; but without any other affections of conſequence, in regard to the principal vital organs, when moderate, it can afford no ſuch indication. The caſe, however, is different when extenuation, without any perceptible cauſe, ſuch as previous diſeaſe, want of ſufficient nouriſhment, increaſes with great rapidity, and proceeds to a very

* Hufeland's Journal, vol iv. p. 309.

high

high degree; when it is not ſtopped by removing the known cauſes which produced it, and when it always advances, accompanied with a ſtrong appetite, even though the patient receives ſufficient nouriſhment, and is expoſed to no exhauſting labour. The ſtate of feebleneſs manifeſts itſelf ſtill more by other circumſtances, and morbid affections.

§ 176.

III. Deficiency of muscular power.

Rigidity and difficulty of movement in the extremities, which proceed to lameneſs; weakneſs of the ſpine; inability to ſtand upright, and with firmneſs; relaxation of the muſcles; and hence the falling down of the under jaw in old people, their tottering gait, hanging of the head, crookedneſs of the ſpine, and bent form.

This feebleneſs of the muſcular power is alſo temporary, after violent exerciſe, or great ſtraining of individual members, as well as of the whole body in general. It is then relaxation and wearineſs, as we experience in the evening of every laborious day.

§ 177.

IV. Deficiency of cohesion in the solid and fluid parts of the body.

This is particularly obſerved in childhood, but it is moſt ſtriking in the ſolids. Hence the pliableneſs of the bones, which can aſſume all poſſible ſhapes by twiſting; and on this depends the wretched art of the jugglers, who prepare children in this manner for performing their tricks. This coheſion is leſſened alſo by diſeaſe. In the rickets the bones become

ſoft as wax, ſo that they can be cut through with a knife. Fractures are occaſioned by a very ſlight blow. The period of expanſion in childhood diſtinguiſhes itſelf by ſuch a deficient conſiſtence of the ſolids. For this reaſon children are ſometimes backward in learning to walk.

Deficient coheſion of the fluids manifeſts itſelf by abundant hæmorrhages and watery blood.

§ 178.

V. TOO EARLY OR TOO LATE EXPANSION.

This circumſtance is to be obſerved in regard to the ſpiritual powers as well as the phyſical. Premature expanſion is a ſtronger indication of feebleneſs than retarded expanſion.

1. Premature ripeneſs of the mental powers, particularly when diſproportioned to that of the body.

Retarded expanſion of the mental powers is ſeldom a ſign of bodily weakneſs; it often ariſes from want of culture and exerciſe. It may much rather exiſt where the vital ſtrength is complete.

2. MANHOOD AT AN UNCOMMONLY EARLY PERIOD. This is the conſequence of debilitating ſtimulants, both in a moral and phyſical point of view. The women, who in warm climates bring forth children at ten, become barren at thirty.

Retarded expanſion of manhood, under other circumſtances, and accompanied with certain affections, may be a ſign of a weakly conſtitution.

3. TOO SPEEDY GROWTH, particularly to a great height, with a thin body and flaccid muſcles, connected with affections which indicate immoderate irritability and activity of all the organic machinery; for

for example palpitation of the heart, hæmorrhages, congeſtions.

4. BACKWARDNESS IN GROWTH AND IN WALKING. Too late teething indicates feebleneſs of the conſtitution. It is often the conſequence of the ſcrophula and rickets. The cauſe lies in a defective conſiſtence of the ſolids.

5. STATIONARY OR RETROGRADE STATE OF THE EXPANSION OF THE MENTAL OR BODILY POWERS, is alſo a ſign of aſthenia; as in diſeaſes, alſo in the period of expanſion, about the time of teething, inability to walk in children which had begun to uſe their legs; the loſs of memory in diſeaſes, &c.

§ 179.

VI. UNEQUAL AND DERANGED EXPANSION OF THE POWERS.

This is the caſe when individual organs do not keep pace with the whole in their conformation, being either advanced or retarded in a diſproportionate degree: as for example, early expanſion of the powers of thought in a feeble body. To this head belong unequal expanſion of the powers of the ſoul and of the memory; the judgment retarded. Nature beſtows on ſome organs too much, and gives to others too little.

All theſe untimely and unequal expanſions are either the work of nature or of art. In the former caſe they are anomalies, the conſequences of general feebleneſs; but in the latter, artificial feebleneſs, the work of perverted education. We muſt here call to mind the manifold cauſes which produce a partial conformation of the organs; for example, the excluſive or particular uſe and ſtraining of one individual organ.

§ 180.

VII. IMPEDED ACTION OF THE POWER OF THE WILL ON THE ORGANIZATION.

To this belongs the want of power to act on the organs of motion, alſo weakneſs of the organs of thought, ſo far as they depend on the ſoul. This is the ſtate of confined activity of the powers of the ſoul obſerved in diſeaſe and great age.

§ 181.

VIII. IMMODERATE IRRITABILITY.

We muſt here recur to the difference already mentioned between real and apparent feebleneſs, and diſtinguiſh that irritability which is the immediate conſequence of feebleneſs.

1. TOO GREAT IRRITABILITY OF THE ORGANS OF THE SOUL, immoderate ſuſceptibility of mental ſtimulants. This takes place in perſons whoſe minds are thrown into violent agitation by the moſt trifling cauſes, and in whom the paſſions manifeſt themſelves by remarkably violent effects.

Such mental ſenſibility ariſes either from a debilitated bodily conſtitution, or is the conſequence of too violent ſtraining of the powers of the mind, or of external influences; as for example, the loſs of memory from great heat.

2. IMMODERATE IRRITABILITY OF THE ANIMAL ORGANS. This relates to the different ſyſtems of the nerves, the veſſels of excretion and ſecretion, the ſyſtem of the ſkin, &c. It is ſometimes nervous, and ſometimes muſcular irritability. The phenomena thence ariſing, which may be conſidered as ſigns of

feeble life, are too great ſenſibility for external and internal impreſſions from the air, weather, heat, cold, nouriſhment, medicine, and poiſons.

We thence deduce a great many diagnoſtics of the aſthenic ſtate, which is thereby manifeſted in the moſt evident manner. Many people experience ſevere ſufferings from every change of the weather, ſo that their bodies form real thermometers; many full grown perſons are violently affected by a laxative which might be given to a child; and many are exceedingly ſenſible of cold, which ariſes from ſome debilitating cauſe; as for example, continual reſidence in a warm apartment. Senſibility in regard to irritation from diſeaſe, a principal ſymptom of feebleneſs, depends on the ſame cauſes. This great ſuſceptibility relates either to all diſeaſes in general, or only to certain morbid poiſons. Many become affected by a certain cauſe, which on the greater part of mankind would produce no effect at all. To this head belongs, in a particular manner, ſuſceptibility of being infected by contagion. Some are attacked by all epidemic diſeaſes, and theſe people are thoſe whoſe bodies have acquired a prediſpoſition for them by debilitating cauſes. The more the body is debilitated, the eaſier it receives an impreſſion from the poiſon of infection; and hence the application of debilitating means, violent bleeding, and purgation, as the ſuppoſed preventative method, is highly improper.

In the higheſt degree of feebleneſs in malignant fevers, we find alſo the higheſt degree of irritability, great effects from ſmall cauſes. Hence the hiccup in perſons at the point of death, exalted ſenſation in the ſenſes of hearing and ſight. This irritability produces a deception in feeling.

How much such an unnatural irritability is a sign of the asthenic state, may be gathered from this circumstance, that it takes place after the application of debilitating causes, the immoderate or long continued effects of violent stimulants; as for example, after the untimely or immoderate use of evacuants, and after violent or tedious diseases.

§ 182.

IX. A WANT OF SUFFICIENT IRRITABILITY.

This deficiency may be owing either to an actual want of irritability, or to its being only in an oppressed state. This state is directly the opposite of the former. In the case where irritability is only oppressed, we have indirect feebleness. This insensibility may relate either to the organs of the soul, or to the animal organs. In the latter case, when the free activity of the vital principle is merely oppressed, vital strength may exist. This state, in which real and apparent feebleness may be easily confounded, is distinguished by combining several symptoms taken from the whole constitution. The rules for this purpose can be established only by accurate observation of individual cases.

X. DEFICIENCY IN THE POWER OF REPRODUCTION, manifests itself either by parts which have been lost being slow in growing up, or not growing up at all, or by the slow and difficult healing of wounds. Thus ulcers are difficult to be healed, and broken bones slow in uniting, in old age. This deficiency in the power of reproduction is a more evident sign of feeble life, when neither age nor disease forms any impediment;

pediment; for example in children, or perſons who in other reſpects are ſound.

§ 183.

XI. LOCAL FEEBLENESS OF INDIVIDUAL PARTS.

Affections which attack ſometimes one part of the body and ſometimes another, or which attack one part in particular, indicate feebleneſs in the conſtitution. People who are often troubled with ulcers, rheumatiſm, and pains in certain parts of the body, are of a weakly nature. The cauſe is:

1. Frequent diſeaſe in any ſingle organ, ſhews that ſome morbid matter is wandering about through the body; as for example, the flying gout; or if the reader chooſes rather, great ſuſceptibility of the conſtitution for morbid irritation, which may have a ſpeedier effect on the body, becauſe individual organs are weakened and prepared for its reception.

2. Feebleneſs of individual organs, on account of the connection of the whole, is followed in a greater or leſs degree by general feebleneſs.

§ 184.

XII. DIFFERENT AFFECTIONS, WHICH WHEN COMBINED AND COMPARED WITH EACH OTHER, AND WITH THE CONDITION OF THE BODY, FORM SYMPTOMS OF IMPORTANCE.

1. Becoming ſoon fatigued by labour. We muſt here take into conſideration the ſtate of the body, the nature of the labour, with various other circumſtances; and alſo previous habit.

2. Senſation of laſſitude.

This ſenſation ariſes from the idea excited in the

mind by the ſuffering ſtate of the organ; from the vital principle being weakened.

This ſenſation may be either falſe or real. The former is the caſe when the activity of the vital power is only confined by external cauſes, without any change having been effected in the organization.

3. Immoderate perſpiration occaſioned by trifling cauſes. This is a particular ſymptom of a weak ſtate of the organs of the ſkin; but in other reſpects an affection of general feebleneſs. To this head belongs periodical perſpiration, which always indicates a derangement of the lymphatic ſyſtem *.

4. Different kinds of eruption, which appear periodically, and ſuddenly diſappear.

5. Swelling of individual parts from lymphatic accumulations.

6. Frequent bleeding at the noſe.

7. Frequent fits of giddineſs; giddineſs ſuddenly coming on without bodily motion; when ſitting or ſtanding, or when looking down from a great height. At the commencement of diſeaſe, or after diſeaſe, people are much more liable to giddineſs than at other times.

8. Frequent pains in the head or teeth; temporary ſtiffneſs and immobility of the limbs; numbneſs of individual parts.

9. Heavineſs and laſſitude in the limbs; a ſenſa-

* A man, after a tertian fever, with which he had been attacked in the 43d year of his age, was ſubject to violent perſpiration over his whole body, ſeveral times a day, at irregular periods, even during the ſevereſt cold of winter. About the 67th year of his age, this perſpiration gradually diſappeared, and he died of the dropſy in the cheſt.

tion

tion of weight in the feet; a general ſenſation of oppreſſion and heavineſs throughout the whole body.

10. Rheumatic affections, ſometimes in one part of the body, and ſometimes in another.

11. Senſations of uneaſineſs in the lower belly; hypochondriac affections; bad digeſtion from a deficiency in the tone of the bowels; irregularity in the uſual evacuation by ſtool.

12. Ulcers difficult to be healed.

13. Early infirmities of age; and in general the affections and accidents of a greater age than that to which people have attained; as for example, the diſeaſes incident to manhood in childhood; the feebleneſs, relaxation, and exhauſted ſtate of old age in the bloom of life. The external habit of body, mien, figure, and deportment, alſo indicate premature old age.

14. In regard to the ſtate of the body and powers, diſproportioned evacuations.

Theſe are the cauſes as well as ſymptoms of feebleneſs in a very high degree. Under this head may be included immoderate perſpiration; bleeding, flux, and diarrhœa; too great ſecretion of the brain, or ſeminal fluid.

15. Certain peculiar diſpoſitions of mind.

The ſoul, through the ſympathy of its organs, receives impreſſions from the ſufferings of the animal organs of the body. Theſe impreſſions are partly attended with, and partly deſtitute of a conſciouſneſs of our real ſituation. In the firſt caſe we are perfectly ſenſible of our ſufferings, and can point out the ſeat of the pain; in the latter we have only a confuſed ſenſation, which tells us in general that our nature ſuffers. In both caſes this ſenſation affords a ſtrong ſymptom

of

of the aſthenic ſtate, to which phyſicians ought to pay more attention than is done in common. This ſenſation, which we ſhall call ſenſation of diſeaſe, may be attended with ſome degree of deception; but it ſtill deſerves attention.

Timidity, low ſpirits, and depreſſion, eſpecially when they come on ſuddenly, without any perceptible action of a mental ſtimulant, are owing to ſome deficiency in the ſyſtem. The caſe is the ſame in regard to ſudden fits of mirth and intemperate joy; eſpecially when ſuch changes in the diſpoſition are contrary to the habitual ſtate of the perſon ſubject to them. To this head belong the depreſſion and anxiety in the hypochondriaſis and hyſterics, which often take place alternately with an oppoſite ſtate of mind; alſo the care, timidity, anxious foreſight and caution of old age.

Comfortleſs reſignation, with the loſs of every ray of hope, every ſpark of courage, and all ſuſceptibility of conſolation, inſenſibility, and ſtupidity, are either ſymptoms of extreme feebleneſs, and of a highly exhauſted ſtate of the vital principle, or ariſe from exalted, and almoſt more than human ſtoiciſm. A proper opinion may be formed of both theſe diſpoſitions of mind, by having a knowledge of the patient, of the cauſes which produced theſe ſtates, and of other circumſtances. Thoſe diſpoſitions of mind produced by immoderate irritability, whether it exiſts in the animal or mental organs, is different. To this head belong great ſenſibility in regard to mental ſtimulants; organs of the ſoul ſubject to ſudden agitation; violent emotions by the agreeable or depreſſing paſſions, ſpeedily and eaſily excited; ſuch as chagrin, peeviſhneſs, anger. The exertions of the mind, in a certain

certain ſtate, when rendered highly irritable, become blunted by the reſiſtance oppoſed to it, if not ſupported by real power, and only by a ſudden movement of immoderate irritability; irregular weak re-action, excited by a violent ſtimulant. This exertion of ſtrength ſoon ends in laſſitude and debility—Of this we have an inſtance in the paſſionate exertions of weak men, as well as in children, *vana ſine viribus ira.* On the other hand, when this immoderate irritability of the ſoul finds no re-action, or only re-action exceedingly weak, it is exalted to a very high ſtate. In the firſt caſe the imagination creates an apparent reſiſtance, and the paſſion manifeſts itſelf by cruelty, a deſire of deſtroying and annihilating. The fear of danger from the reſiſting object leads to an idea that the danger may be prevented by removing and deſtroying the object. For this reaſon the greateſt cruelty is found in men who are weak and timid. The moſt horrid cruelties in war are committed by a flying or retreating enemy.

16. Different diſeaſes, which are the conſequences of a deficiency or oppreſſion of the vital principle, and which have a nearer relation to the ſuffering organization, ſerve as ſure ſymptoms of the aſthenic ſtate. Of theſe I ſhall treat hereafter. We can aſcertain alſo the exiſtence of feeble life by certain changes in the progreſs of diſeaſe, which are accompanied with peculiar aſthenic affections.

§ 185.

SYMPTOMS OF THE HIGHEST DEGREE OF FEEBLE LIFE IN ASTHENIC DISEASES.

Theſe ſymptoms manifeſt themſelves in that ſtate which we call MALIGNANT, for example in malig-

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nant fevers; and are the more dangerous, when without any perceptible cauſe they make their appearance at the commencement of a diſeaſe. To theſe belong an exceſſive degree of debility ariſing ſuddenly; giddineſs, tremor, fainting often taking place from a very trifling cauſe; ſpaſmodic affections; a diſtorted and unnatural conformation of the face; hiccup, involuntary evacuation by ſtool and urine; great ſhortneſs of breath, great indifference and ſtoiciſm, ſudden loſs of memory, ſtupidity, hebetude of the ſenſes and judgment; inſenſibility to painful ſtimulants, a weak, low, quick, unequal, and intermitting pulſe, coldneſs of the extremities.

§ 186.

We ſhall next deſcribe the ſymptoms of feeble life according to the DIFFERENT PERIODS OF LIFE. Each period of our exiſtence has a peculiar aſthenic diatheſis from the moment of our birth till death, the moſt remote boundary of human life. We ſhall diſtinguiſh from the above that aſthenia, peculiar to the different ages, which is founded on the changes produced, in the courſe of time, by the influence of external impreſſions on the organization; that is on the phyſical nature of man. We ſhall here attend only to thoſe ſymptoms which appear at different periods in the ſtate of feeble life.

§ 187.

SYMPTOMS OF FEEBLE LIFE IN CHILDHOOD.

1. IMPERFECT CONFORMATION.

This is either general, or relates to individual organs. We have an inſtance in children born before the proper period:

period: The uncommon ſmallneſs of the body, and particularly the head; uncommonly ſoft, tender limbs; retarded formation of individual parts, ſuch as the nails, epidermis, hair on the eyebrows and eyelids; the other ſymptoms of feebleneſs, continual ſleepineſs, whimpering, great difficulty of breathing, aged appearance of the phyſiognomy.

2. DEFECTIVE FORMATION,

Is either an impediment in the organ to the neceſſary and requiſite influence of the vital principle, or ſuch a miſhaped organ deranges the whole body, on account of its irregularly combined component parts, and the changed and uncommonly modified mixture of theſe parts which thence reſults. The conſequences are irregularity in the circulation of the juices; derangement in the functions of the body, and in general pernicious changes in all the organs. Monſters, therefore, have a feeble life, and a ſhort exiſtence.

3. FIXED STATE OF THE VITAL PRINCIPLE, OR APPARENT DEATH.

In new born children this is an aſthenic ſtate of the higheſt degree, as the commencing life is in itſelf exceedingly feeble. Letting the blood eſcape from the umbilical cord, which however is very ſeldom neceſſary, is of no avail as a counter indication of aſthenia, but ſerves only to remove what impedes the circulation of the blood. (§ 493.)

§ 188.

SYMPTOMS OF FEEBLENESS IN CHILDREN DURING THE FIRST PERIOD OF LIFE.

1. EXTERNAL BODILY STRUCTURE. Soft, flabby fleſh, looſe ſkin, uncommonly large head, aged countenance,

tenance, pale ſickly complexion, blue ring around the eyes, dull, clowded and watery eyes; weakneſs of the limbs; want of power in the ſpine to keep itſelf erect; weakneſs of the muſcles of the neck, and therefore a drooping head. The conſequences are a backwardneſs in growth and in walking.

2. INTERNAL STATE OF THE BODY.

Indigeſtion, irregularity in going to ſtool, ſwelled, hard belly, flatulencies, continual whining and crying, bad breath, abundant perſpiration, great ſenſibility in regard to cold air.

§ 189.

PERIOD OF CHILDHOOD.

Retarded expanſion; ſtate of the powers, and of the external ſize, as in the firſt period, or infancy; a look ſtill too infantile, ſo that a child of three years old has the appearance of a child of one year; great ſoftneſs, tenderneſs, and relaxation in the limbs; weakneſs of the ſolids; too great ſoftneſs of the bones, and therefore fractures and exoſtoſis readily take place; weakneſs of the powers of digeſtion, great irritability and ſenſibility in regard to impreſſions, and hence ſuſceptibility of diſeaſes, and great ſufferings from them; heavineſs and laſſitude, great averſion to motion, peeviſhneſs, melancholy, dulneſs of comprehenſion, want of curioſity.

§ 190.

PERIOD OF YOUTH.

Weakneſs in the powers of motion, retarded conformation of the organization, deficiency of digeſtion, irregular appetite, deranged nouriſhment of the body, and hence extenuation, hectic fever, heavineſs, aptneſs

to

to be fatigued, inclination to reſt, retarded growth, or immoderate growth in length, by which the body becomes exceedingly thin; melancholy, want of youthful livelineſs and ſpirits.

§ 191.

PERIOD OF MANHOOD.

Impeded external and internal functions of the organization, want of power in the extremities, affections of hypocondriaſis, too great irritability, and therefore an inclination to ſpaſms; aptneſs to become eaſily tired, averſion to labour, want of cheerfulneſs, weakneſs of the mental powers, and, in general, too early a tranſition to old age.

§ 192.

PERIOD OF OLD AGE.

Old age is of itſelf the period of feebleneſs; but we obſerve alſo in this ſtate a greater or higher degree of the ſymptoms of feeble life. The unavoidable natural feebleneſs of old age is different from that which is excited and accidental. The latter diſtinguiſhes itſelf by a higher degree of the natural feebleneſs of old age; as for example, uncommon ſluggiſhneſs in the functions; great hebetude and inſenſibility in regard to impreſſions; ſtiffneſs of the muſcular powers; inactivity in the power of digeſtion, commencing death of individual organs, deficiency or loſs of the ſenſes, confined circulation. All theſe ſhew an actual deficiency and progreſſive decreaſe of the vital principle.

§ 193.

§ 193.

In remarking the ſymptoms of feebleneſs in the different periods of life, we muſt take into conſideration the diſeaſes peculiar to each of theſe periods; as for example in children, frequent vomiting, cough, convulſions, teething, the rickets, worms, ſchrophula; in childhood the longer duration of theſe diſeaſes; diſorders of the ſtomach, bleeding at the noſe; in youth diſpoſition to hot and inflammatory diſeaſes, hæmorrhages, diſorders of the lungs; in manhood the gout, hæmorhoids, hypochondriaſis, and diſorders of the lower belly; in old age giddineſs, cough, ſhortneſs of breath, want of ſleep, defluxions of the ears and eyes, pain in the kidneys, difficulty of urine, flying gout, and hence itching of the ſkin, and prediſpoſition, in general, to chronic diſeaſes.

CHAPTER IV.

Special grounds and symptoms of feeble life in some organs and systems.

§ 194.

Each individual organ of animated human nature makes of itſelf a particular whole, yet depending on the human frame in general, and connected with it. Each organ in a certain meaſure has its own vital principle, which manifeſts in it the ſame phenomena as thoſe which we obſerve in the human ſyſtem in general: its own irritability, nervous power, muſcular power, &c.; conſequently each organ undergoes in its interior parts certain changes, certain peculiar modifications, according as it is acted upon by external cauſes. Each organ, therefore, has a peculiar ſtate of health or diſeaſe, and hence there are diſeaſes peculiar to the lungs, eyes, ears, &c. Theſe peculiar changes, which take place in one organ, communicate themſelves in a greater or leſs degree to the organization in general. This communication is determined according to the nature of the acting ſtimulant, as well as of the affected organ; and according to its connection with the organization in general, or individual organs of more or leſs importance.

It is often difficult, and ſometimes impoſſible, to diſcover by ſymptoms whether a ſingle organ is excluſively affected; whether the changes which take place in it affect the whole organization or only ſome parti-

cular organs, and in what degree and on what organs they act. We are ſtill too little acquainted with the wonderful conſent of all the parts of the human frame. Some in the diſeaſed ſtate are liable to great modifications, ſo that certain organs act upon each other by ſympathy, which in other caſes have very little connection. In many caſes that organ only in which we obſerve ſtriking ſymptoms of diſeaſe ſuffers moſt, though the diſeaſe may in general be common: for example; in dyſentery, the rectum; in inflammation of the breaſt, the lungs, &c.*

§ 195.

The combination of ſeveral organs for one end, by which a certain function of human nature is performed, is called A SYSTEM. The connection of all the organic parts of the human body is called, in general, THE SYSTEM. This general ſyſtem is compounded of various individual ſyſtems, which co-operate for one end; that is, to maintain life. Thus we have a nervous ſyſtem, a ſyſtem of the blood veſſels, of the organs of digeſtion, the organs of breathing, &c.

§ 196.

The vital principle, which is diffuſed throughout the whole body, undergoes in each ſyſtem, and in each organic part of that ſyſtem, a peculiar modification. It is ſtill the ſame vital principle; but the mode in which it manifeſts itſelf is different, according to the ſtructure of the particular organ. Thus it

* Roſchlaub's Pathogeny, Part II. § 567. § 643.

acts

acts in the organs of the nerves as nervous power; in the muſcles as muſcular power; in the organs of digeſtion as the digeſtive power. But, in general, in the whole of the organization of man, it ſhews itſelf by ſuſceptibility of irritation and irritability; and particularly as an animating power, in animalization.

§ 197.

Each organ is diſtinguiſhed by a peculiar ſtructure in regard to the compoſition and admixture of its component parts; and many organs can be known from each other by their external ſtructure. Each organ poſſeſſes a certain peculiar degree and particular modification of ſuſceptibility for the vital principle, and the irritability thence depending. By this peculiar character it is rendered fit for the function aſſigned to it by nature. Thus the eye is made for ſeeing, and the ear for hearing (§ 33).

§ 198.

A diſtinction, however, muſt be made between the animal matter of the organization, and the vital principle acting in it. The nervous power muſt not be confounded with the nerves; nor the power of digeſtion with the ſtomach.

§ 199.

Diſeaſes of the organization, whether they relate to ſeveral organs at the ſame time, or to one organ excluſively, are not diſeaſes and feebleneſs of the vital principle, which acts in the organs, as properly ſpeaking there are no diſeaſes of the ſoul, but they are organic diſeaſes; affections of human nature, which

arise from a changed state of the solids and fluids, excited by certain stimulants.

§ 200.

Agreeably to this observation, we shall take a view of the asthenic state of some of the principal systems in the human body.

§ 201.

Of these, the nervous system first deserves our attention. People talk a great deal of nervous weakness, without properly knowing what is meant by it. At the period when Dr. White's system was in vogue, all unnatural phenomena, and all diseases, were ascribed to the nerves. The nerves are the chief organs of the human body; the finest perhaps of the animal substances; the best fitted for the action of the vital principle, and the most susceptible of its influence; that is, of all the animal parts, the most animated. In them, therefore, are manifested the essential property of the vital principle, irritability in the highest degree. The nerves are the conductors by which the vital principle is conveyed throughout the whole body. The more an individual organ is filled with nerves, it is the more animated; as is the case with the brain and the spinal marrow.

Those changes and diseased states, generally ascribed to the nerves, are phenomena which arise from the changed action of the vital principle, as well as from certain changes in the interior part of the organization. They are affections, which relate not merely to the nerves, but to organic parts in general. We know

with certainty that, in ſome diſeaſes, the nerves ſuffer; but we do not know to what extent. The name therefore of nervous diſeaſes has been made by far too general. Nervous medicines *(nervina)* have a very indefinite meaning. Spirituous medicines are ſometimes claſſed among them, and ſometimes antiſpaſmodics; and yet an emetic or laxative is ſometimes a real *nervinum*. Every thing ſaid of the braced or relaxed ſtate of the nerves, nervous fluid, and nervous ſpirits, is mere hypotheſis.

When we conſider more narrowly the ſymptoms of nervous feebleneſs, as they are commonly laid down, we find them in general merely phenomena of too weak or immoderate irritability: we are therefore almoſt induced, honeſtly confeſſing our ignorance, to leave the nervous ſyſtem entirely out of queſtion, and to adhere rather to the ſtate of the vital principle and of the organization in general. Would a practitioner loſe any thing if, for example, in caſes of cramp, without thinking of the nerves, he ſhould adhere to that indication which directs him to leſſen the immoderate exciting irritability, and then to repair the loſt powers?

Diſeaſes of the organ of the ſoul have very often been conſidered as affections of the nerves. There is reaſon, however, to think that there are no diſeaſes in which the nerves alone are affected, though in many they ſuffer more or leſs.

According to this obſervation, the whole conceit reſpecting nervous ſpecifics, as well as diſeaſes merely nervous, falls to the ground.

For the farther confirmation of what has been here obſerved, we ſhall mention a few ſymptoms ſaid to indi-

cate nervous feebleneſs. They certainly ſhew, in part, that the nerves are affected; but with our imperfect knowledge of the nervous ſyſtem, they can ſupply the phyſician with nothing but hints that ſome of the chief organs of life are deranged; that a diſproportion prevails between the vital principle and the organization; and, in particular, that a diſeaſed ſtate exiſts in the interior of certain organs.

THESE SYMPTOMS ARE,

1. IMMODERATE SUSCEPTIBILITY OF ALL THE PASSIONS. This properly is a diſeaſe of the organ of the ſoul, whether that organ is affected by ſtimulants, which act more intimately and in ſome meaſure immediately upon it, or by ſuch as are communicated to it by means of the coarſer animal organs.

The affections communicated to the organ of the ſoul, by means of the conſent of the other organs and ſyſtems of the body, and the incidents thence ariſing, ſuch as the changed motion of the blood, palpitation of the heart, fainting, the uſual hyſteric ſymptoms, have been commonly claſſed among the ſigns of nervous weakneſs; but they can be ſo only when combined with other ſigns of immoderate irritability.

2. VIOLENT ACTION OF PHYSICAL STIMULANTS. Immoderate ſtrong effects from laxatives: ſpaſms readily occaſioned are the conſequences.

It is admitted that the nerves may be either weak and highly ſenſible, or highly ſenſible and at the ſame time ſtrong; alſo weak and poſſeſſed of little ſenſibility. But the ſigns which are ſuppoſed to denote ſtrength or feebleneſs of the nervous ſyſtem, are much rather ſigns of a general energy or atonia of organization.

The

The ſymptoms which are ſuppoſed to denote ſubjective aſthenia of the nerves, ſuch as frequent ſtarting and inclination to ſhuddering or ſhivering, giddineſs, hyſteric head-ach, ſpaſmodic affections, tranſient convulſive movements of the limbs, delicate ſkin, weak fatigued appearance, belong to the general ſigns of aſthenia.

§ 202.

ASTHENIA OF THE LYMPHATIC SYSTEM.

This ſyſtem conſiſts in a compoſition of organic parts, which by means of the vital principle reſident in them, are deſtined for the buſineſs of abſorption, ſeparation, nouriſhment, and animalization. Irregularities and changes from the ſound ſtate in the interior of theſe organs, have an important influence on the ſyſtem of the human body in general. A ſtate in which either the vital principle, acting in this ſyſtem, does not perfectly manifeſt itſelf, or in which changes take place in the interior of theſe organs, we call feebleneſs of the lymphatic ſyſtem.

The conſequences of the aſthenic ſtate of this ſyſtem, which ſerve us at the ſame time as ſymptoms, are obſtructions in the glands, contraction of the veſſels, deficiency of digeſtion and ſanguification, defective nutrition. The more accurate ſigns of theſe irregularities, we derive from the external ſtate and external changes of the body.

§ 203.

ASTHENIA OF THE SYSTEM OF THE BLOOD-VESSELS.

This ſtate ariſes chiefly from the following cauſes:

1. Deficient, impeded, or irregular influence of the vital principle.

2. Deficient energy and ſolidity of the blood-organs.

3. Defective admixture of the blood; when the individual parts want proper coheſion; when many component parts exiſt in greater quantity than the ſound ſtate, and an uniform relation of the whole, will permit; and when individual component parts, being leſs bound by the vital principle, manifeſt their chemical action.

The ſymptoms of this diſeaſed ſtate of the ſyſtem of the blood-veſſels is well known: they may be aſcertained by the pulſe, and the inſpection of blood taken from the patient. In aſthenic diſeaſes the pulſe is weak, ſoft, low, and exceedingly quick. When the pulſe, in the courſe of the diſeaſe, becomes weaker, ſofter, lower, and quicker, it is a bad ſign. According to Weickard*, we may conclude that the quickneſs of the pulſe proceeds from weakneſs, when the heart beats hard and ſtrong, on the hand being applied over it, while the beating in the arteries is found to be weak: alſo when this quickneſs is increaſed after the uſe of wine or ſtrengthening medicines. A pulſe of this kind often riſes to 140 ſtrokes in a minute.

The great difficulty here is to diſtinguiſh the particular affections of this ſyſtem, from thoſe of the bodily organization in general. Before the diſcovery of the lymphatic veſſels, the empirics had only two objects to which their attention was directed, the blood and ſtomach: diſeaſe of the firſt and ſecond ways. Some even proceeded farther, and conſidered the blood, in which they thought they could find both life and the ſoul, as the animating principle.

* Toiletten lektüre, Part II. p. 554.

They

They preſcribed, therefore, medicines for purifying the blood, by which they imagined they could remove the corruption in its admixture; and talked of the acridity of the blood, &c. In a word, their practice was altogether bloody.

§ 204.

ASTHENIA OF THE ORGAN OF THE SKIN.

This organ is of more importance than many believe. We have not here a mere hide extended over our body, but a general animated organ or rather ſyſtem: the connection of an infinite multitude of organic parts, all directed towards one end, and containing nerves, lymphatic and blood veſſels, the whole forming the medium which connects us with ſurrounding nature. When changes and deviations take place, therefore, in one or more of the organs of this ſyſtem or organization, what conſiderable influence muſt they not have on the ſtate of our whole exiſtence. We know the connection of the organs of the ſkin by its ſympathy with various other organ and ſyſtems: as, for example, the ſyſtem of digeſtion, the bowels, &c.

We obſerve,

1. THE EXTERNAL STATE OF THE SKIN: rough, thick, ſoft, hard, flabby, braced.

2. STATE OF SENSATION; great ſenſibility or hebetude. The latter ſenſation is the conſequence of a confined or irregular action of the vital principle in the organ of the ſkin, which may take place even while the vital principle is in full activity in other organs.

3. DERANGED

3. DERANGED ABSORPTION AND RESORPTION. Hence obſtructions and calloſities in the glands of the ſkin; congeſtions in individual parts; contraction and narrowneſs of the veſſels, which give riſe to a multitude of cutaneous diſorders, outbreaking, immoderate perſpiration, &c. Suppreſſion of the uſual perſpiration. On this changed ſtate depend the dryneſs or moiſture, heat or cold, of the ſkin.

The ſyſtem of the ſkin, therefore, deſerves the utmoſt attention of the phyſician; and thoſe external medicines which exerciſe an action on it, are on that account highly worthy of notice.

§ 205.

ASTHENIA OF THE SYSTEM OF DIGESTION. WEAK DIGESTION.

It too often happens, that people deviate from the happy mean, and run into extremes. Sometimes all diſeaſes are aſcribed to the ſtomach; and ſometimes, though reminded by the moſt lively ſenſations, we ſeem to forget that we have one. This fault ariſes from people conſidering general ſymptoms as ſymptoms of a weak ſtomach, and forgetting that the powers of digeſtion often ſuffer on account of the conſenſus of the whole frame. It happens not unfrequently that ſome affections, conſidered as ſymptoms of a feeble ſtomach, are rather forebodings of it; and indicate medicines totally different from thoſe by which we imagine we produce a direct action on the ſtomach. I ſhall ſay nothing of the error of conſidering mere impurities, and the voiding of them, as the only ſymptoms of a diſeaſed ſtate of the powers of digeſtion: they are the conſequences, and

ſeldom

ſeldom the cauſes, of the diſeaſed ſtate of the ſyſtem of digeſtion, and often appear, within a longer or ſhorter period, after ſome diſagreeable action on this ſyſtem. Artificial evacuation of them may, however, ſecond the exertions made by nature to free the body from ſuch uſeleſs matter; but it cannot directly remove the changed ſtate of the ſyſtem, and reſtore the equilibrium which has been loſt. This ſyſtem is an animated ſyſtem.

Feebleneſs of the ſyſtem of digeſtion ariſes partly from deficiency or irregularity in the influence and activity of the vital principle; and partly from a changed ſtate of the organs. We then find an unnatural irritability of the ſtomach, either with or without the exertion of power. A weak ſtomach is every moment deranged in ſome degree in its functions, both by ſtimulants which have an immediate action upon it, ſuch as food, and by thoſe which affect it by its ſympathy with other organs; for no conſenſus in the human body is greater than that of the ſtomach: it is in ſuch intimate connection with all the other organs, that the mutual affections manifeſt themſelves by the moſt ſtriking external ſymptoms. The ſyſtem of digeſtion ſuffers, both when diſagreeable ſtimulants act upon other organs, and when changes take place in the interior of theſe organs. The other organs alſo are more or leſs affected by a diſeaſed ſtate of the ſtomach. Hence ariſes the great influence of a debilitated ſyſtem of digeſtion on the whole organization; on all the external and internal functions of the body; on all the ſyſtems, and their exertions of power. The conſequences of this may be ſeen, in a very perceptible manner, in the nervous, lymphatic blood and

venal

venal ſyſtems. Abſorption, excretion, ſanguification, &c. are deranged. It is of importance, therefore, to be able to know the ſymptoms of a debilitated ſtate of the ſyſtem of digeſtion, which are exhibited more or leſs by affections of the ſtomach.

1. Belching, oppreſſion in the region of the ſtomach, eructation after eating, or in the morning faſting.

2. A violent, heavy pain in the head.

3. Indolence and drouſineſs immediately after meals.

4. Tongue covered with ſlimy matter.

5. Irregularity in going to ſtool; food paſſing in an undigeſted ſtate.

6. Whole body puffed up, and particularly the lower belly.

7. Bloatedneſs, and bluiſh colour of the lower eyelid.

8. Paſſage of worms by ſtool.

Some of theſe affections may be obſerved where the ſtate of the ſtomach is good, after it has been overloaded; but they become ſtronger ſymptoms of the digeſtive faculty being weakened, when they are obſerved after a very moderate meal of light food; or when they manifeſt themſelves at other times of the day beſides meals.

All thoſe who ſuffer from a weak ſtomach are, in general, feeble, and have great irritability. Debilitated people ſuffer from all ſtimulants; but the ſtomach ſuffers firſt. After expoſure to cold, or any other change, they are immediately attacked with looſeneſs; the perſpiration is checked, and other general affections of the ſyſtem ſoon follow: ſpaſms, hypochondriac and hyſteric complaints; a ſpeedy and general change of the previous ſtate, which manifeſts itſelf by

by a changed phyſiognomy, diſtorted features, pale complexon, dull languid hollow eye, and blue colour of the under eye-lid.

§ 206.

ASTHENIA OF THE SYSTEM OF RESPIRATION.

The ſymptoms are, a compreſſed narrow cheſt, inability to contain the breath long; ſhort and uneaſy breathing, connected with pain aad conſtriction of the breaſt; feeble voice; want of breath when walking up or aſcending any ſteep place: the well-known ſymptoms of aſthma.

Thoſe acquainted with the deſtination of the lungs, know the influence of the aſthenic ſtate of this ſyſtem, and what it is to have a weak breaſt. The lungs very often ſuffer in the period of manhood*.

§ 207.

SYSTEM OF THE ORGANS OF GENERATION.

This ſyſtem has a pre-eminent ſhare of the vital principle, which is communicated, in particular, to its fluid parts. The diſeaſed changes in this ſyſtem excite like changes in the chief vital organs. Every thing, in general, that exalts the activity of the vital principle, has an animating effect on the generative faculty. The organs of generation contain the fineſt material component parts, and the vital principle ſeems to be accumulated in them. What, in general, produces a debilitating effect on man; what in any organ occaſions a diſeaſed change of importance, affects alſo the organs of generation. Hence the

* Hufeland's Journal der prakt. keilk. vol. i. p. 515.

feebleneſs

feebleneſs of the generative faculty when the nouriſhment is poor and deſtitute of ſtrength; alſo in diſeaſes after long continuance, and in old age. When the vital principle is particularly active in any of the other organs, the energy of the generative faculty is leſs; as, for example, during great exertion of the powers of thought.

Feebleneſs of the organs of generation may be conſidered as a ſtrong ſymptom of the general aſthenic ſtate. Derangement of theſe organs is attended with general diſeaſe, feebleneſs, and imperfect expanſion. Hufeland ſays, "I am acquainted with no inſtance of eunuchs having attained to a very great age. They always remain half men*."

§ 208.

ASTHENIA OF THE ORGAN OF THE SOUL.

Though we are not acquainted with this organ, we think it proper to aſſume a medium, by means of which our great and immortal ſpirit exerciſes its action on the coarſe bodily maſs; for, out of reſpect to ourſelves, we cannot entertain the idea of its having an immediate action in our external fleſh and blood. Our nerves, according to the phyſiologiſts, have not ſufficient fineneſs for that purpoſe; and, therefore, it muſt be an exceedingly tender intermediate kind of ſubſtance, or half body, which we heſitate with awe whether we ſhall call ſpiritual or bodily; and which, at our departure from the preſent world, we may perhaps carry with us as a covering for the ſoul, in order to retain ſome remembrance of our

* Kunſt das menſchl. leben zu verlangern, p. 275.

darling

darling habitation. Where this organ of the ſoul exiſts; whether it is diffuſed throughout the whole body, or is ſituated in the brain, is not yet determined, becauſe we do not know where the ſeat of the ſoul is, or whether it actually requires a particular place of habitation. Deſcartes will have it to be in the pineal gland, Drelincourt in the cerebellum, and Mieg in the ſpinal marrow. Sömmering's hypotheſis is well known *. As we have here, however, a very convenient help to enable us to explain many of the phenomena of human nature, we ſhall retain the idea of an organ of the ſoul. Certain manifeſtations of our ſpiritual being can in no other manner be explained, unleſs we have recourſe to materialiſm. The ſoul is unchangeable, and remains unchanged, and all the changes of our nature take place merely in the material part. The ſoul cannot be diſeaſed, and can never become tired or exhauſted; but it may be ſenſible of diſeaſe, and be affected by the ſtate of the body: that is, it receives impreſſions from it. Theſe impreſſions are conveyed to it more immediately through the organ of the ſoul, with which it has the ſame relation as the vital principle has with the nervous ſyſtem. The organ of the ſoul is in a mutual connection with the other organs of the body. The affections of the other organs of the body communicate themſelves to the organ of the ſoul, as the affections of the organ of the ſoul produce changes in the other organs.

The organ of the ſoul has its own peculiar life; its own organic mixture; and, conſequently, peculiar

* See Sömmering über das organ der Seele Konigſberg, 1796.

changes

changes may take place in this organ. We may admit, therefore, a perfect or imperfect, a natural or unnatural, a found or a diſeaſed ſtate of it. The changes which take place in the interior of this organ, are in all probability effected in the following manner:

1. By the immediate influence of the ſoul, and therefore changes excited by ideas.

2. By external ſtimulants, which have a particular action on the nerves; as, for example, poiſon; and hence we may explain the phenomena, the inſenſibility, and phantaſies, produced by narcotic poiſons; alſo the ſpeedier action of ſuch ſubſtances on the powers of the imagination. They ſeem at firſt to produce immediately a change in the organ of the ſoul.

3. By internal ſtimulants. To this head belongs every communication of the changes produced in the ſyſtems and organs of the body; as, for example, in the circulation of the blood; in the lymphatic ſyſtem, &c.

By the impreſſions made on the ſoul there ariſe changes in this organ, which by its means are communicated to the reſt of the body. We may admit a certain gradation, according to which they are communicated more or leſs, ſooner or later, to certain organs. Thus there ariſes from anger firſt a change in the nervous ſyſtem, which we obſerve in the ſpaſmodic ſtate, and the ſtate of exalted irritability: at a later period, the effects ſeem to follow in the ſecretion and excretion. Great changes may take place in the organ of the ſoul, without the other organs ſuffering from them in a perceptible manner. The tone of the organ of the ſoul may be heightened; the excitability

citability and firmneſs of the organs of thought may be exalted in an extraordinary degree; and, on the other hand, natural feebleneſs or hebetude, the conſequence of immoderate irritation, may exiſt.

According to theſe preliminary obſervations, we can judge of the aſthenic ſtate of the ſoul when the tone of this organ is deranged by external cauſes.

The ſymptoms of this aſthenic ſtate are, extremely violent effects from the influence of the paſſions, which are diſproportioned to the kind of ſtimulant; or inſenſibility to mental ſtimulants, hebetude.

We obſerve the great power of the ſoul over this organ, by which its mobility and irritability are periodically ſuſpended, when the ſoul is particularly engaged with any idea.

§ 209.

We muſt mention, alſo, that ASTHENIA WHICH ARISES FROM A DISPROPORTIONED RELATION OF INDIVIDUAL ORGANS TO EACH OTHER. As the partial feebleneſs of a ſingle organ communicates itſelf to others, the ſame is the caſe, on the other hand, with partial ſtrength. Thus, by ſtrengthening a ſingle organ, we have the means of diffuſing general ſtrength throughout the whole organization, eſpecially when this ſtrengthening relates to a principal organ. Hence it appears, to what organs our attention ought chiefly to be directed, in order to preſerve health and ſtrength. Among theſe are the lungs, the ſtomach, the ſkin, and the genitals.

By an inequality in the ſtrength of individual organs, and the different manifeſtations of ſtrength or feebleneſs in the functions of individual ſyſtems,

there ariſes a diſproportion in the ſtate of the whole; as, for example, when the powers of thought are excluſively exerciſed, the power of digeſtion ſuffers, as well as other faculties.

In this caſe we have the following indications for reſtoring the equilibrium:

1. NEGATIVE, by intermitting the excluſive uſe of the individual organ, and removing the ſtimulant which acts upon it. The man of ſtudy muſt make pauſes in his mental occupations.

2. POSITIVE, by weakening and leſſening the exalted irritability. This is effected by cold applied locally in phrenitis.

3. BY STRENGTHENING THE OTHER ENFEEBLED ORGANS. We muſt, in particular, endeavour to ſtrengthen that organ which ſuffers on account of its ſympathy with the afflicted organs; for example, by maintaining and ſtrengthening the ſyſtem of digeſtion in people who labour a great deal with the head.

In the oppoſite caſe, when an organ ſuffers particularly from feebleneſs, the indication is: To prevent the debilitating action; to employ ſtrengthening topical medicines, which however requires great precaution, and muſt be done only under certain conditions; and to uſe weakening means in regard to thoſe organs which, on account of the conſenſus, have acquired a preponderance of ſtrength.

When individual organs ſuffer from an exceſſive degree of feebleneſs, ſo that the activity of the vital power in them is confined, other organs acquire immoderate ſtrength; an exalted irritability, becauſe the vital power in them is ſo much the more active. The

conſequence

conſequence is, a general feebleneſs, as theſe organs are worn out by their immoderate degree of irritability. When one ſide of the body is paralytic, the action of all the powers in the other is much ſtronger: ſecretion and abſorption are performed in the ſound ſide with uncommon activity. Hence it happens, that in a return of apoplexy the diſeaſe more readily attacks the ſound parts.

To reſtore the equilibrium thus deſtroyed, we muſt endeavour to ſtrengthen the enfeebled organ, but at the ſame time to leſſen the immoderate irritability of the ſound organs. In caſes of lameneſs, therefore, STRENGTHENING TOPICAL MEDICINES ſhould be applied to the diſeaſed organ, and WEAKENING MEDICINES to thoſe not attacked; for example, cold fomentations. Thus, in caſes of lameneſs, bleeding may be employed in the oppoſite ſide. Hence it may be explained, why empirics, by their random mixture of medicines, ſometimes animating and ſometimes debilitating, are enabled on certain occaſions to effect cures (§ 427).

CHAPTER V.

REMOTE CAUSES OF THE ASTHENIC STATE.

§ 210.

THE immediate causes of asthenia lie in a change of the internal organization; and the question, by what means this change is produced, leads us to external stimulants, which give occasion to this internal change or derangement of the internal state.

Such derangement of the internal state can, however, take place without external influence; without causes acting externally, when we consider the organization as animated. The process of life is not eternal: the organs are at length worn out by the activity of the vital principle operating in them; they sustain, in the course of time, a loss in their irritability and sensibility, and become gradually unfit for the action of the vital principle. Thus death of the organization must ensue, even under the influence of the most favourable circumstances.

§ 211.

The remote causes act conditionally on the organization, according as it has more or less receptibility for them. This receptibility exists in the highest degree in the asthenic state. Where there is a small degree of susceptibility of irritation, external causes will produce no changes in the organization. Something, however, depends on the internal strength of the

the external ſtimulant. There are external cauſes which derange the moſt ſolid organization.

All external agents are, in general, remote cauſes of diſeaſe. To enumerate the whole of them, I ſhould be obliged to write an ætiology. From the immenſe multitude I ſhall therefore ſelect only thoſe which leave immediately behind them an enfeebled ſtate of the organization, and which diſtinguiſh themſelves by their debilitating effects.

§ 212.

Theſe cauſes may be properly divided as follows:

1. DIRECT DEBILITATING; ſuch as cold, external violence, warm liquors.

2. INDIRECT DEBILITATING, by withdrawing the neceſſary ſtimulants; deficiency of nouriſhment, both in regard to quantity and quality.

§ 213.

Another diviſion of theſe cauſes, into prediſpoſing and accidental, may be eſtabliſhed in theory, but it gives occaſion to many practical errors, as they may be very eaſily confounded with each other, and particularly thoſe which pave the way for diſeaſe with thoſe that precede diſeaſe.

Prediſpoſition to debility is an enfeebled conſtitution of the organization, which exiſts before the aſthenic affections manifeſt themſelves; but by means of which theſe affections are eaſily produced by external cauſes. Such an aſthenic prediſpoſition is, as it were, a mean ſtate between health and diſeaſe. In theory, the line of ſeparation between aſthenia and aſthenic prediſpoſition may be drawn with a conſi-

derable degree of accuracy; but in practice the diagnosis must be attended with great difficulties.

§ 214.

If the constitution is already enfeebled, debilitating stimulants act with much more violence and certainty. In that case also stimulants, which seem capable of producing little effect, occasion the greatest changes. After great fatigue, sudden fear will be attended with the most dangerous consequences.

We shall now proceed to mention a few of the principal debilitating causes.

§ 215.

The first to be considered is, DESCENT FROM ENFEEBLED PARENTS. It however frequently happens, that sickly feeble parents have strong children; but these children always come into the world feeble, and their asthenic predisposition is removed by proper treatment. The children, in particular, of those parents who have weakened their organs of generation by dissipation, or who have begot them in old age, or at an unripe period of life, bring with them into the world feebleness and disease; they have an old appearance, a wrinkled withered skin hanging loose around the bones; they suffer in a double degree from the common diseases of infancy, and the existing predisposition for disease is expanded in them by the slightest accidental cause.

Diseases of the lymphatic system, for example syphilis, scrophula, and the gout in parents, give occasion, in particular, to the asthenic state in children.

Improper conduct of the mother during pregnancy, when

when ſhe expoſes herſelf to debilitating ſtimulants; for example, venereal infection, the immoderate uſe of hot liquors, will alſo promote the aſthenic ſtate in the children.

The firſt affections and diſeaſes of new-born children, the more they deviate from thoſe uſual at that period, inflammation of the eyes, convulſions, glandular ſwellings, &c. ſerve as evident ſigns of this aſthenia.

§ 216.

What can tend more to weaken the vital thread, and, in general, to lay the foundation for an aſthenic prediſpoſition during life, than a DEBILITATING EDUCATION? And theſe bad conſequences will be ſtill more promoted by neglecting children during the firſt years of their life, when they are ſo ſuſceptible of every ſtimulant, and at the ſame time too deficient in power for their organization to withſtand properly their pernicious action; while they poſſeſs ſuch a high degree of irritability, that the ſtimulants which exerciſe an action on them, give riſe to the moſt violent agitation. A perverted education not only with-holds the ſtrengthening means neceſſary for repairing the loſt powers, at an age when, on account of exceſſive irritability, the greateſt conſumption takes place; but it increaſes this irritability by external pernicious ſtimulants. Theſe debilitating means are, bad, coarſe, indigeſtible food; ſpirits, and ſtrong beer.

A child not ſuckled by its mother is unfortunate, but ſtill more ſo when it receives its nouriſhment from a diſeaſed, conſumptive, or venereal nurſe. In this manner a general prediſpoſition to feebleneſs, if not to

individual diſeaſes, is tranſmitted. A foundation for feebleneſs in children is laid alſo by too ſudden weaning, and in particular by too ſpeedy a tranſition to hard undigeſtible nouriſhment. Bad nouriſhment is for the moſt part a cauſe of wretchedneſs in the nurſery too much neglected; and to this may be added, want of freſh air and ſufficient exerciſe; too much confinement within doors, too much ſitting; immoderate ſtraining of the bodily powers in running, and afterwards by improper recreations; too much tenderneſs by being kept too warm, relaxation, and ſoftening by warm fomentations; alſo a contrary treatment, by expoſing children to too much cold, in order to harden them; calling forth the powers of the mind in an imprudent manner, and, in general, by an artificial forcing of nature in regard both to the body and the mind, and by the improper treatment of the diſeaſes of infancy. Feebleneſs is promoted alſo, and the beautiful works of nature are deformed, by bandages and narrow cloathing; the expanſion of the body is retarded in order to produce a delicate figure; and the complexion of wretchedneſs and diſeaſe is communicated to children by depriving them of pure air. The conſequences of ſuch an education, which is too common in nurſeries, may be readily conceived: the poor feeble beings tremble when expoſed to the leaſt breath of air, and not only give the phyſician an opportunity of ſtudying in them all the diſeaſes of children, but alſo a great number of the diſeaſes of grown perſons, which, by their natural tranſition to the age of childhood, are interwoven in their infantine conſtitutions. Such an early feebleneſs, where the vital principle itſelf has ſuſtained a loſs, is tranſmitted, with all its

conſe-

conſequences, to the future periods of life. Want of irritability in the organization, and weakneſs in the power of all the inſtruments requiſite for the functions of nature, ſuch as animalization, &c. make all reparation from without uſeleſs; ſo that no perfect reeſtabliſhment can take place. Such beings have a feeble wretched exiſtence; and their whole life may be called a chronic diſeaſe.

§ 217.

In regard to debilitating cauſes, the following obſervation muſt be added: ſome of theſe cauſes debilitate POSITIVELY, ſuch as debilitating ſtimulants; and others NEGATIVELY, through deficiency: as for example, want of pure air; want of neceſſary nouriſhment, &c. The debilitating cauſes will admit of being treated here in a more curſory manner, as they are known as the general cauſes of diſeaſe.

§ 218.

The AIR by which we are ſurrounded may, by changes in its admixture and component parts, become an aſthenic cauſe. We here allude in particular to the ſpecific admixture of the air; the proportion of its component parts, by which it peculiarly produces changes in our bodies. Damp air weakens the tone of the ſolids, and deſtroys the equilibrium of the vital principle in all the organs, and particularly in the ſyſtem of the nerves. When the atmoſphere is damp, the moſt aſthenic diſeaſes prevail, ſuch as apoplexy, lameneſs, dropſy, gout, nervous fevers.

Heat increaſes irritability, and relaxes, at the ſame time,

time, the tone of the fibres, when it is connected with moiſture; and hence the great prevalence of nervous diſeaſes in hot climates. Cold evidently debilitates in a certain meaſure, and according to the nature of the bodily conſtitution; when in an inferior degree it acts as a mean for carrying off heat, and in its extreme degree it produces the ſame effects as heat. It acts differently on a ſtrong powerful body, from what it does on a body enfeebled by previous cauſes. It has been remarked in London, that far more people die during a ſevere than during a moderate winter.

The air, from various cauſes, acquires a different mixture of component parts; ſo that it ſometimes contains more oxygen, ſometimes more carbon, and ſometimes more azot. It takes up the evaporations of plants and animals, either ſeparated through a living chemical proceſs, or diſengaged by the inanimate operation of decompoſition and corruption, or from evaporation during the artificial preparation of chemical bodies, or from marſhes, and by theſe means becomes one of the greateſt debilitating cauſes and poiſons for man.

The choice of a habitation and place of reſidence is therefore of the utmoſt importance. Living in large cities, where a great many people are crowded together in a very narrow ſpace, and ſurrounded by evaporations from all the kingdoms of nature, is prejudicial to health; likewiſe living near large lakes, moraſſes, quarries, and bogs; in diſtricts often expoſed to inundations, or where the air is filled with exhalations from putrid bodies. The caſe is the ſame in regard to living in confined air, that is, air which cannot be again filled with better component parts after it has become

become corrupted by breathing, as water is by long ſtanding. Long reſidence therefore in a cloſe room is pernicious, and one of the chief cauſes of feebleneſs*.

§ 219.

Food, in a variety of ways, may be a cauſe of feebleneſs.

1. A want of that nourishment which is necessary for maintaining life. The animalized bodily matter, to ſupport the chemical operation of life, requires reparation of that which has been loſt. If this reparation is not ſufficient; if it be diſproportionate to the matter loſt; if irritability be too violent, and the waſte occaſioned by the organic powers be ſo great, that a ſufficiency of vital matter cannot be conveyed into the body, at leaſt during this period of immoderate vital activity, feebleneſs is occaſioned, and life conſequently is ſhortened. The greater the deficiency in the reparation of that which has been loſt, the more the powers decreaſe; the more morbid irritability acquires a ſuperiority, and exerciſes its deſtructive power on the human frame. Thus, feveriſh affections and ſpaſms ariſe as the conſequences of hunger. This ſtate proceeds ſo far, that at laſt the active power of the organs is totally exhauſted, and lameneſs and rigidity enſue; irritability can no longer be excited, becauſe all ſenſibility for ſtimulants in the organs is extinguiſhed. Thus death follows from hunger.

* To avoid being too prolix, I ſhall refer the reader to Sprengel's *Handbuch der Pathologie*, Leipſic, 1795, Part I. page 490. where every thing of importance reſpecting this ſubject has been carefully collected.

2. An

2. AN IMMODERATE QUANTITY OF NOURISHMENT, that is, disproportioned to the power of digestion and to habit, increases on the one hand irritability, and at the same time introduces corruptible matter into the body; because the excessive quantity of nourishment impedes the action of the absorbing vessels. This immoderate irritability of the organs of digestion commonly ends in lameness.

3. THE USE OF UNSOUND NOURISHMENT. Nourishment of this kind is prejudicial, either by increasing too much the activity of the vital principle, and consequently irritability and predisposition to inflammation, or by depressing it below that degree necessary for maintaining health, or by introducing pernicious matter into the body. To this head belong, in the first case, stimulating high-seasoned dishes; the immoderate use of animal food and spirituous liquors; and in the last case unnatural food, or food corrupted by its admixture, preparation, or being long kept. Among the chief causes of feebleness, are reckoned spirituous liquors, the effects of which are seen in tremor of the hands, a pale complexion, bloated face, ulcers, dropsy, gout, apoplexy, and other asthenic diseases. Among the unsound kinds of nourishment, of the second class, are too watery food; a vegetable diet while exposed to severe labour; farinaceous food; water used as a beverage to those not accustomed to it. The body obtains corrupted matter by putrid flesh, the flesh of diseased animals, unfermented beer, sour wine, unripe fruit, &c.

The vital principle of the digestive faculty is, however, able to overcome the pernicious effects which arise from the quantity and mixture of nourishment, and the business of the lymphatic system can be carried

ried on with ſuch ſtrength as to prevent corrupted nouriſhment from being communicated to the juices; but this vital ſtrength depends on the operation of ſo many different cauſes, that, in proceſs of time, when ſuch pernicious ſtimulants are continued, there is produced a greater relaxation of theſe organs, the more their powers are unnaturally excited.

Sometimes the conſequences of improper diet do not appear till a late period; but in that caſe they are ſo much the worſe (§ 144.) The conſequences of the daily uſe of lead with the food, do not ſhew themſelves ſometimes till after ſeveral years. The ſtomach, which in the period of health and power has long withſtood unſound nouriſhment, or the irregular uſe of it, ſo that people begin to imagine they have accuſtomed themſelves to ſuch unhealthful food, diſplays its feebleneſs in declining years, and is half lamed in old age.

5. TOO TENDER NOURISHMENT. The powers of digeſtion by ſuch nouriſhment acquire too little exerciſe; and, for want of uſe, their activity becomes relaxed. A like inactivity takes place alſo in ſeveral other organs and ſyſtems; as for example, weakened abſorption and reſorption, and there ariſes in particular a weakened reaction of the powers of digeſtion againſt the action of the nouriſhment; ſo that the moſt violent affections of the ſtomach are produced by the commoneſt food.

To this head belongs the excluſive uſe of vegetable food, particularly without ſufficient exerciſe, and to ſuch as have not been accuſtomed to it from their infancy. Children who have been fed with vegetables, without the ſmalleſt addition of animal food, or the milk

milk of animals, are, for the moſt part, exceedingly feeble.

The relation between exerciſe and nouriſhment is alſo to be taken into conſideration. By bodily labour and exerciſe nouriſhment is rendered eaſy of digeſtion.

§ 220.

One of the principal cauſes of feebleneſs is a SEDENTARY MODE OF LIFE. Not uſing the bodily powers impedes expanſion of the organization; prevents the body from acquiring ſufficient ſtrength and ſolidity, and keeps the internal functions in a like ſtate of inactivity. The unfortunate inclination for reſt and indolence ſtill increaſes the more it is gratified, and the conſequence is general debility. Hence extenuation, dropſy, and cachexy. This ſtate is the more injurious to health, when, during the general inactivity of the body, individual organs are particularly exerted; as for inſtance the organs of the ſoul.

§ 221.

IMMODERATE SLEEP, BUT IN PARTICULAR WANT OF THE NECESSARY SLEEP. In the firſt caſe there ariſes a want of the requiſite irritability, obſtruction of the juices, congeſtions, inactivity of all the functions; in the latter caſe, immoderate irritability, feveriſh affections, ſpaſms, and conſequently waſte and exhauſtion of the powers.

§ 222.

IMMODERATE ACTIVITY OF THE BODILY POWERS, by which more is conſumed than can be repaired by nature;

nature; and from which, by immoderate uſe of the organs of motion, relaxation and lameneſs are produced. Irritability is exalted in an exceſſive degree; and by the immoderate activity of individual organs, the whole body ſuffers in conſequence of ſympathy. Too early ſtraining, when diſproportioned to the powers, which is not even required in animals, is one of the chief cauſes of feebleneſs.

IMMODERATE ACTIVITY OF THE POWERS OF THE SOUL excites immoderate irritability in the organ of the ſoul, which at length ends in the relaxation, lameneſs, and inutility of that organ. By the relation between it and the other organs, theſe affections of the organ of the ſoul are communicated to the whole body. Too much employment, an unſteady flying from one purſuit to another, the conflict of contending paſſions connected with this ſtate, and the reſtleſs neceſſity of continual thinking, which marrs the enjoyment of exhilarating pleaſures, and even ſleep, are particularly prejudicial.

§ 223.

CARE OF THE SKIN NEGLECTED.

The importance of the organ of the ſkin is well known (§ 204.) Neglect of bathing, waſhing, and purifying the ſurface of the body, contributes, in a peculiar manner, to that national debility, ſo prevalent at preſent; produces derangement in the organs of the ſkin, irregularity in the general ſenſation, and great irritability or lebetude.

§ 224.

THE PASSIONS which produce an exalted activity of the ſoul are, in a certain degree, eſpecially when excited by unpleaſant impreſſions, highly debilitating. Terror, anger, fear, care, hatred, melancholy, and envy, occaſion an irregular activity of the vital principle. Some of them excite immoderate irritability, and others oppreſs and deſtroy it. The conſequences, in regard to all the organs, are ſimilar to thoſe of the moſt dreadful poiſons. "All the paſſions inhabit the female body," ſays Rouſſeau, "and their violence is the greater the leſs they can be gratified."

§ 225.

The artificial feebleneſs and debility produced by ſenſibility carried to exceſs, deſerve alſo to be mentioned. Diſeaſe of the imagination becomes at laſt actual diſeaſe: it is all the ſame whether one is really ſick, or only imagines ſo. There are ſome men who, as it were, conſider it indecent to be always well, and who, by their perverted mode of life, bring themſelves to ſuch a ſtate, that their health is entirely deſtroyed. A pale ſickly look, a dull languid eye, ſoft delicate limbs, diſorders of the breaſt and ſtomach, inability to make any exertion, weakneſs and hebetude of the ſenſes, and particularly a weakneſs of ſight, produced by the prematare uſe of glaſſes, are all conſequences of affected diſeaſe among the higher claſſes *. As ruddy cheeks are conſidered a ſign

* About the beginning of the preſent century it was a modiſh folly, common among ladies of quality, to affect feebleneſs and indiſpoſition even to exceſs. Thus the Ducheſs of Marlborough, when

ſign of ruſticity, one of the firſt points in education is to guard againſt having the appearance of health: the child is carefully kept within doors, that it may not loſe its pale look; it is half ſtarved to make it appear ſlender, and the female ſex uſe chalk or vinegar to give them a fair complexion.

To this head belong overſtraining the imagination; expoſing one's ſelf to dangerous ſituations; ſympathy for the ſufferings of others carried to exceſs; filling the mind with gloomy melancholy ideas; longing for and ſighing after impoſſibilities, the phantoms of a deranged brain; the ſo called fever of love; continual complaints and lamentation reſpecting pretended miſeries; activity directed to wrong objects, which exhauſts the fineſt powers of life to no purpoſe, and of which the melancholy conſequences are deſpair, poverty, and ſuicide.

§ 226.

There is nothing which tends to debilitate in a greater degree, or with more certainty, than VENEREAL DISSIPATION: unnatural ſtraining and weakening the organs of generation, by which the vital power itſelf is injured, the nobleſt juices of the body exhauſted; irrita-

when ſhe travelled from London to Blenheim, cauſed whole waggon loads of ſtraw to be diſpatched for the purpoſe of covering the pavement before the entrance of the inns, that her delicate ears might not be hurt by the noiſe of the horſes and carriages. When ſhe paſſed through towns where there were ſoldiers, a meſſenger was diſpatched to the commanding officer, to requeſt that he would prevent the drums from being beat during her ſtay. *Hiſt. Gemälde merkwürdiger begebenheiten beruhmter menſchen.* Leipſic, 1798, Vol. IV. p. 173.

irritability increaſed to an unnatural degree, and the power of action exceedingly weakened. All theſe are proofs that nature puniſhes no diſſipation in ſo dreadful a manner. There are no ſymptoms which diſplay in a more ſtriking manner the utmoſt ſtate of debility than thoſe external ſigns exhibited by a body deranged by venereal exceſſes: depreſſion of all the powers, inactivity of all the functions, both bodily and ſpiritual, which require any exertion; weakneſs of the limbs, decreaſe of muſcular ſtrength, hebetude of all the ſenſes; a pale, yellowiſh, leaden-coloured complexion, melancholy, timidity, irreſolution, loſs of memory and judgment, great irritability and ſuſceptibility of mental impreſſions, deranged imagination always occupied with laſcivious and obſcene ideas, averſion to labour, and languor in all occupations except thoſe which relate to impure objects. The diſeaſes which ariſe from this high degree of aſthenia, have a direct tendency to deſtroy and annihilate the powers: ſuch for example as ſpaſms, conſumption, ſlow fever, fainting, &c.

§ 227.

We ſhall mention PAIN as a cauſe of feebleneſs. Pain is exalted irritability, combined with an unpleaſant ſenſation. Irritability exalted in an unnatural degree ends at laſt in relaxation and lameneſs. We obſerve,

1. The degree of the pain.

2. The kind and nature of the ſuffering organ.

3. The degree of the irritability and ſenſibility for pain.

The ſtrength of the ſtimulant, or the pain-exciting cauſe,

cauſe, is not always in the ſame ratio with the ſenſation of the pain. If the pain attacks an organ, which on account of its multitude of nerves is highly ſenſible, and which by this great quantity of nervous power is more intimately connected with the general organization of the body, the pain, though from a weak ſtimulant, is exceedingly violent; as for example, in the eye or the lungs. Pain generally occaſions the greateſt changes in that organ on which it more immediately acts; but ſometimes the pain is much more ſenſible in other organs which are connected with the irritated organ. Pain, whether bodily or mental, always excites a peculiar activity of the organ of the ſoul, by which the changes in the body are communicated to the powers of the imagination. This activity is excited not only by corporeal but by mental ſtimulants. The phyſical cauſes which excite pain may be weak, and the mental excitement violent; and in that caſe the ſenſation of pain will be ſtrong. Perſons whoſe mental ſenſibility for bodily pain is exceedingly delicate, ſuffer a great deal from weak ſtimulants. This great mental ſenſibility is communicated to the body, and increaſes the unnatural changes in the organs. Hence there ariſe from weak pain-exciting cauſes the moſt violent ſymptoms, convulſions, &c. which only take place in others after the application of the ſtrongeſt ſtimulants. It ſometimes happens alſo that the ſoul, by great exertion of the power of the will, prevents the conſequences of painful impreſſions on the organ of the ſoul; ſo that the pain-exciting ſtimulants are not felt. This may be effected by diverting the imagination, or exciting oppoſite ideas. Thus a malefactor, notwithſtanding the

application of the moſt painful torture, could not be induced to confeſs. He repeated inceſſantly the words *io ti veddo* * ; and being aſked afterwards what he alluded to by them, he replied, the gallows.

The ſymptoms excited by the irritation of pain are ſigns of aſthenia ; convulſions and ſpaſms, violent perſpiration, bloody ſweats, reſtleſſneſs, horror, timidity, ſighing, ſhortneſs of breath. The conſequences of violent and long continued pain, whether bodily, or produced by impreſſions on the mind, are laſſitude, weakneſs, exhauſtion of the organs. The ſenſation after pain is ſimilar to that experienced after ſevere labour, and proceeds to the utmoſt debility. Reſt and ſtrengthening medicines are neceſſary to reſtore the loſt powers. This effect follows from pain, both when organized parts ſuſtain actual injury ; as by tearing the nerves, burning, pricking, &c. and when no injury is perceptible. The latter is the caſe not only in regard to mental but alſo to bodily pain. The external ſtate of the organ is not changed ; there ariſes only a change in its admixture, which, when the painful irritation ceaſes, is removed. The conſequences of this irritation are either conſtant, as where an organ is actually annihilated, or only tranſitory.

§ 228.

THE UNNECESSARY AND IMPRUDENT USE OF MEDICINE, either by the ſound or the diſeaſed, debilitates the body. Medicines excite an artificial diſeaſe, by which the exiſting diſeaſe is expelled ; they

* Three Italian words, which ſignify, I ſee thee. T.

occaſion in the internal organs certain changes, by which the unnatural ſtate is removed, and the natural ſtate brought back in its ſtead. Now if the ſtate of the organs be natural, and not diſeaſed, medicines will produce a directly oppoſite ſtate; and conſequently render thoſe who are in good health ſick. A great deal depends alſo on the relation which the medicine bears to the ſuffering organ, and to the changed ſtate of the interior of the organ. If a diſproportion prevails in their mutual relation, ſo that the medicine is either too ſtrong or too weak, or if it be continued too long when the unnatural ſtate of the organ is removed, the diſeaſe will be either renewed, rendered worſe, or prolonged, and conſequently the cure retarded. From theſe obſervations ſome idea may be formed of the injury which muſt ariſe from a miſapplication of medicine, either in the ſound or the diſeaſed ſtate. This holds good not only in regard to medicine, but alſo in regard to diet; in both caſes the effects on the ſtate of the organs are the ſame. The conſequences, therefore, are ſicklineſs, diſeaſe, and debility. To this head belong ill timed ſpring cures, the uſe of the bath, bleeding, purging, ſudorifics, the ſo called preventative method, milk or vegetable diet when not ſuited to the ſtate of the patients. Such perſons, by the inceſſant uſe of medicines, become ſtill weaker and more diſeaſed; ſenſibility is blunted, and ſtronger ſtimulants are always neceſſary to produce changes in the body.

§ 229.

Poisons, both phyſical and contagious, are debilitating. Some poiſons kill ſpeedily, according to their

nature and the quantity uſed; and others gradually deſtroy the internal organs, by which means they bring on death at a later period: as, for example, the poiſons of lead, copper, and quickſilver. The latter caſe is the conſequence of poiſons in general, when their effects are not counteracted by ſome antidote; but they always leave behind them debility and diſeaſe, either from the poiſon ſtill exiſting in the body, or from the organization being injured by it. Thus when the phyſician is ſo fortunate as to prevent, by his art, the ſudden conſequences of a ſtrong doſe of arſenic, dreadful ſymptoms ſtill remain, which often produce death by a ſlow fever, after a period of many years. Loſs of ſtrength, cachetic appearance, irregular fits of ſhivering, oppreſſion at the ſtomach, even after the uſe of light nouriſhment; dryneſs of the ſkin, painful irregular ſtools, reſtleſsneſs, depreſſion of ſpirits, ulcers, night ſweats, gradual decay, lethargy, and at laſt dropſy, debilitating ſweats, and diarrhœa.

If all poiſonous ſubſtances do not produce ſuch evident ſymptoms, when not expelled by art from the body, they are attended with many bad affections, which are a ſufficient proof of an aſthenic ſtate. We obſerve this ſtate alſo in thoſe caſes when ſecret poiſon has been introduced into the body.

The moſt dreadful of theſe ſlow-working poiſons is LEAD. The conſequences of ſwallowing particles of lead do not often appear till after a number of years: the ſymptoms are heavineſs at the ſtomach, oppreſſion, and tenſion of the lower belly; loathing of food, obſtinate coſtiveneſs, ſpaſms, fainting, ſlow fever, jaundice, giddineſs, ſtiffneſs of the limbs, lameneſs, and dropſy.

dropſy *. Like effects are produced by copper, mercury, and antimony.

Vegetable poiſons, when gradually uſed in ſmall portions in food, if they do not occaſion ſudden death, produce alſo the moſt melancholy ſymptoms. They act partly as narcotics, and partly in a mechanical manner on the ſtomach and bowels by their acridity. What can be more deſtructive than irritability excited in an immoderate degree, the conſequences of which are ſtupefaction, intoxication, diſpoſition to inflammation and deſtruction, by phyſical violence, of the organs neceſſary for life? What is more capable to produce the higheſt degree of debility, lameneſs that ends in death?

§ 230.

INFECTIOUS POISONS, which communicate themſelves by contact, are a frequent cauſe of the aſthenic ſtate. In regard to the action of theſe poiſons, we obſerve,

1. THE KIND AND DEGREE OF THE INFECTIOUS POISON. Some infectious matter is volatile, and ſome is of a coarſer kind. The former communicates itſelf at a diſtance through the air and through different ſubſtances; the latter only by coming in contact with an infected perſon. In ſome infectious poiſons facility of infection is occaſioned by the quantity of the infectious matter preſent, but in general an infinitely ſmall particle only is neceſſary.

2. SUBJECTIVE CAPABILITY OF INFECTION. It

* *Die Bleiglaſur des irdenen Küchengeſchirres als ein hauptquelle vieler unſerer krankheiten* vom Hofrath G. A. Ebel. Hannov. 1794. Though the author in ſome things carries his ideas too far, he is entitled to thanks for having turned the public attention to this object.

consists in a peculiar constitution of the animal body, by which it is rendered fit for receiving infection. Such a disposition exists in different bodies in different degrees, and is periodically greater or less: it depends on the vital principle, as well as on the organization. This receptibility is greater when the vital principle is unactive, and when unnatural changes take place in the organization itself, or when a predisposition for infection exists; as, for example, when the body has been debilitated by depressing affections of the mind, or by evacuations.

3. THE EXTERNAL RELATION OF CAUSES ACTING IMMEDIATELY ON THE BODY FROM WITHOUT: as, for example, the atmosphere, heat, cold. Infection, therefore, is more communicable under certain circumstances: for example, it is more easily diffused through corruped air filled with carbon, and is far more dangerous in a hot climate, at a warm period of the year, or in apartments kept too warm. Infectious diseases, on the other hand, are far less apt to be communicated where the air is pure, and in a cold climate: they generally cease in the time of winter.

Of all diseases, those of the infectious kind debilitate the body most, and in the shortest period.

§ 231.

We shall now make a few observations on the debilitating effects of disease. Diseases weaken the body not only during the period of their attack, but they leave behind them an asthenic disposition. The greatest degree of debility, however, arises from those diseases which attack the nerves or the lymphatic system. Diseases either increase irritability in an unnatural manner,

manner, or leſſen the power of action, or produce both theſe effects. Sometimes one effect is the conſequence of another; ſo that, after irritability has been too violently excited, the power of action is weakened, as is the caſe in regard to ſpaſms; or after a great weakening of the power of action an irregular activity of irritability enſues: as the hiccup, and convulſions of dying perſons.

1. Diſeaſes of the nervous ſyſtem. Irritability, when excited in an immoderate degree, debilitates by producing an irregular activity of the vital principle. Hence the great laſſitude after fits of the epilepſy.

2. Diſeaſes of the lymphatic ſyſtem weaken the admixture of the organic parts, which are thereby changed and deranged, and impediments muſt therefore ariſe to the influence of the vital principle. The ſcrophula, ſyphilis, dropſy, and cachexies of all kinds, may ſerve as examples. The venereal diſeaſe is the principal ſource of that general debility which every where prevails. Among the principal debilitating lymphatic diſeaſes, may be reckoned thoſe which change the internal ſtate of the organization ſo much, that the aſthenic prediſpoſition is communicated by procreation; as, for example, the gout, ſyphilis, and ſcrophula. We muſt not, however, always admit ſpecial diſeaſes, but a general prediſpoſition to certain kinds of corruption. Thus a venereal prediſpoſition, in children, manifeſts itſelf by the rickets and ſcrophula. It is not neceſſary that the parents ſhould have been actually affected with ſyphilis, or any other of the ſo called hereditary diſeaſes, as a general prediſpoſition to theſe diſeaſes may exiſt by communication

tion from one race to another through different marriages. That this predispoſition to diſeaſe is not always called forth, but remains concealed, depends upon circumſtances. Proper treatment will ſometimes prevent this predispoſition from making its appearance, or will extirpate it entirely.

Among thoſe diſeaſes which leſſen the power of action (§ 82.) in a peculiar manner, or which withdraw the fluid parts of the body, and immediately weaken the conſiſtence of the ſolids, is evacuation by ſtool, perſpiration, urine, bleeding, ſemen, ſaliva, phlegm. Debility is a ſpeedy conſequence when ſuch evacuation does not bear a proper relation to the nature of the body. This feebleneſs ends at laſt in lameneſs and death. The affections are, extenuation, deſiccation of the body, paleneſs, ſhrinking of the limbs, convulſions, lethargy, rigidity. The body becomes dried and withered like a plant deprived of water.

This feebleneſs takes place alſo in regard to individual limbs from which the juices and nouriſhment are withdrawn, or which, by means of the conſenſus, are attacked or affected.

§ 232.

As if the natural debility excited by diſeaſe were not ſufficient, it muſt be promoted alſo by art; by a DEBILITATING MODE OF TREATMENT. How much ought we to admire the energy of nature, or, rather if the reader chooſes, the good ſtructure and ſolid connexion of organic parts, which are able to withſtand ſuch a coalition of foes. Sometimes irritability is excited in an immoderate degree; and ſometimes

times the power of action is weakened, both by medicines and diet; ſo that, in fact, more people are killed by bad phyſicians than by diſeaſe!

1. THE METHOD BY IMMODERATE EXCITEMENT AND STRENGTHENING. The conſequences of too violent irritability are well known. By ſuch a method a diſpoſition to inflammation and ſpaſmodic affections is promoted; the criſes are deranged, and the ſalutary exertions of nature, or rather the reparation of the loſt equilibrium of the powers, is impeded. To this head belongs the untimely uſe of opium, wine, cinchona, hot ſtomachics, &c. The diſeaſe is ſpeedily ſuppreſſed, or rather confined in the body, ſo that a laſting unnatural ſtate takes place in the body; a prediſpoſition to diſeaſe which afterwards manifeſts itſelf by a variety of affections (§ 362). The conſequences of checked fever, checked gonorrhœa, &c. are well known. Affections to which a prediſpoſition exiſts, independently of theſe, then break out. If a prediſpoſition to gout exiſts, it will be called forth after a checked fever, whereas it might have been perhaps leſſened or extirpated by ſuffering the diſeaſe to paſs through the uſual criſes. Ought not this, therefore, to ſhew the danger which may be occaſioned by Brown's method in unſkilful hands?

2. THE IMMODERATE USE OF EVACUANTS. Purging, ſweating, bleeding, ſalivation, have all their proper periods, and thoſe not acquainted with theſe excite an artificial diſeaſe of the fluids. Too violent or too long continued evacuation occaſions all the bad effects announced in the preceding ſection (§ 231). To this head belongs too long ſuckling, particularly

in

regard to feeble mothers: the consequences sometimes are, besides general feebleness, loss of memory and blindness.

§ 233.

The improper use of medicine in diseases, without paying proper regard to their relation with the disease or the constitution, or the use of them too long continued, is, in a particular manner, productive of feebleness.

§ 234.

The treatment and conduct of convalescents serve also sometimes very much to increase and promote feebleness, either by the too long continued use of medicine, or too early leaving off the means of cure; by improper evacuants, and antiphlogistic, or, on the other hand, strengthening and irritating medicines and diet, too long confinement within doors, the privation of pure air, unnecessary confinement to a warm bed, &c. Many patients can never be cured unless certain impediments are removed, unless their place of residence is changed, unless they return to their former habits, &c. or unless certain relations are altered.

CHAPTER VI.

NATIONAL DEBILITY. DEBILITY OF THE AGE.

Ω πέπονες κάκ' ελεγχέ Αχαΐδες οὐκ ἐτ' Αχαιοὶ.
HOMERI ILIAD. II. 235.

§ 235.

WHEN the before-mentioned debilitating cauſes attack ſeveral perſons at the ſame time, or generally prevail in certain diſtricts, they form A GENERAL ASTHENIC PREDISPOSITION which is the cauſe of the prevalent aſthenic diſeaſes. If this prediſpoſition is found among a whole people, we call it NATIONAL DEBILITY; or if it prevails in certain ages, or among one or more generations, we ſpeak of a DEBILITY OF THE AGE.

§ 236.

The cauſes of this general debility are not to be ſought for ſo much in the climate, and the prevailing conſtitution of the atmoſphere and weather, as in the general mode of life which ſeveral men or a whole people have adopted, and by which a particular age is diſtinguiſhed. The fault, therefore, lies more in mankind themſelves than in nature. In a hot climate we find the inhabitants feebler, far more irritable, and more ſenſible of external impreſſions; far more inclination to nervous diſeaſes, earlier maturity and manhood, and in general earlier old age and a ſhorter duration

duration of life than in a moderately cold climate. On the other hand, in the extreme parts of the north, the men are ſmall, weak, and incapable of enduring ſevere or continued labour. The Icelanders, towards their fiftieth year, are in general aſthmatic, and die before their ſixtieth. The unhealthfulneſs of the climate of Jamaica, and Carthagena in South America, is well known. All the inhabitants have a pale meager look, as if they had juſt recovered from a ſevere diſeaſe, and the newly arrived Europeans ſoon aſſume the ſame complexion. The influence of the air of marſhes, as well as of hot damp air, has already been mentioned (§ 218.) However, even in an unfavourable climate, a relative ſtrength and ſolidity of the human conſtitutution are poſſible, unleſs the natural evil be increaſed, and rendered ſenſible by an improper mode of life.

§ 237.

General aſthenia exiſts rather PERIODICALLY than progreſſively. In oppoſition to the ſuppoſed ſtill increaſing debility of the human race, which is aſcribed in particular, but very unjuſtly, to nature, to a general decay of the earth, a decreaſe in the productive power of our ſublunary world, many objections might be made. The obſervations on which theſe aſſertions are founded, are drawn too much from ſingle caſes, from too circumſcribed a view, and from individual ages or diſtricts, to admit with propriety of a general concluſion. The earth is ſtill in the ſame ſtate of youth as it was a thouſand years ago; and we find the ſame proportion, ſpeaking in general, in all created beings in regard to ſize and ſtructure; the period of human life is ſtill the ſame as it was in the time of David.

David. The accounts given of the gigantic ſize and immenſe ſtrength of men in the early ages are mere fables, as well as thoſe given of whole nations of dwarfs. Nay, notwithſtanding that general debility which prevails by an education and mode of life different from the common, hardy men are produced, who thus form exceptions to the general ſtate of the age in which they live. But as the mode of life generally followed is at variance with nature, we find general debility among ſuch men alſo.

§ 238.

This general aſthenic prediſpoſition prevails therefore merely among individual nations, and in ſome ages. The latter is the natural conſequence of the education and mode of life of one or more generations. We learn with aſtoniſhment from hiſtory how far men individually or in ſociety can proceed in deſtroying and enfeebling their natural powers. By luxury, corruption of morals, voluptuouſneſs, and diſſipation, whole nations have been converted into wretched, feeble, and delicate beings. What were the Romans in the time of the Emperor Julian? They were ſo enfeebled, according to Ammianus Marcellinus, that when they were ſailing in their pleaſure boats on the Tyber, and it happened that a ſun-beam penetrated to them, they were immediately thrown into convulſions.

§ 239.

The preſent race, indeed, are not equal, in many reſpects, to their anceſtors. Who can deny that, ſince the laſt century, a general decreaſe of ſtrength has

has taken place among almoſt all the nations of Europe? But who does not ſee that the cauſe does not lie in nature, but in adventitious circumſtances and relations, which it is in our power to alter? Theſe cauſes are certainly worthy of our attentive examination.

§ 240.

By a mode of life, ſuch as that which ſhall be hereafter delineated, mankind, for ſome centuries paſt, have, in compariſon of former times, been born with a weakly conſtitution. Education does not improve this innate feebleneſs, which however it might do even where a great degree of it exiſts, but increaſes it, and lays the foundation for ſicklineſs during the whole life. We rear tender hot-houſe plants in a mode which is directly at variance with nature, deprive them of proper room for their growth, of pure air, of natural heat and motion; ſlaves to faſhion and prejudice, we form them in the extremes of cold and heat; excite their irritability in an unnatural manner, by artificial, mental, and bodily ſtimulants; debilitate their powers, or retard their expanſion, either by reſt or inactivity, or by too early and immoderate exertion; cruelly deprive the young generation of the happy innocent ſtate of childhood, and engraft upon them the pains and ſufferings of the age. In the following period, the youth is either conſigned to a learned education, during which the body is totally forgotten, or he is put apprentice to ſome artiſt or tradeſman, without previous care having been taken to give his body the neceſſary firmneſs and ſtrength. In this caſe, violence is offered to nature.

§ 241.

§ 241.

The principal cauſe of the feebleneſs of the preſent generation, is the neglect of female education, particularly in regard to every thing that concerns bodily conformation and health. The whole of female education is contrary to nature, and tends, in a peculiar manner, to weaken and debilitate. From the period of birth, girls are kept in a ſtate of inactivity and conſtraint, much more than is the caſe among boys, and the free expanſion of their powers is impeded by lacing and confining their bodies. The female ſex, at preſent, are educated in an inactive and ſedentary ſtate, in which they are afterwards retained during their whole lives, by faſhion, convenience, or their occupations. The circle of their action is confined; they are accuſtomed to trifling mechanical operations, which afford no employment to the mind, ſo that their imagination, particularly in the ſolitude to which they are devoted, finds ſufficient leiſure to indulge in immoral ideas. As they poſſeſs great ſenſibility; as the organ of the ſoul, in females, is highly ſuſceptible of irritation; and as their powers of imagination are eaſily excited by the circumſtances in which they are placed, they are readily miſled by enthuſiaſm, ſenſibility, and folly. Every art of luxury is exerted to gratify this unfortunate propenſity, and ſtill to increaſe it; health, peace of mind, domeſtic happineſs, and many other enjoyments, are ſacrificed to inceſſant diſſipation, rage for faſhion, taſte for magnificence, and pride. This much to be lamented ſex are torn, at too early a period, from the innocence of childhood, and placed in improper ſocial relations: Nature, in every reſpect, is anticipated; maturity,

both of the mental and bodily powers, is forced before the proper time; puberty, in particular, is haſtened, and every thing is diſtorted and corrupted, for the ſake of falſe glare and ſhew.

This is a melancholy but true picture of female education, particularly in the higher ranks, and which, unfortunately, by the increaſe of luxury, is more and more imitated among the lower claſſes of ſociety. And what muſt be the conſequences, when we ſuffer the moſt beautiful part of the human race to be corrupted in ſo unaccountable a manner? Will not this corruption be tranſmitted to our children? The debility of the Aſiatic nations is, with juſtice, aſcribed to the corrupt education of their females, who are bred up in cloſe confinement, and accuſtomed to inactivity and idleneſs. And what elſe is the partial occupation of our girls, when employed with trifles and toys, which are not ſufficient to keep the limbs in proper exerciſe, but idleneſs? This perverted education of the fair ſex is the cauſe that our children, during the period of infancy, at leaſt when they are entirely in the hands of women, are educated in a manner equally improper.

§ 242.

Our whole conduct and mode of life is calculated to promote and increaſe that feebleneſs which is born with us, and interwoven in our frame by education. This is the caſe not only in the higher, but even among the lower claſſes. A very great part of thoſe called people of faſhion are expoſed to a mode of life by which the powers are either only partially exerciſed, or kept in total inactivity. The number of

thoſe

thoſe who lead a ſedentary life, exceeds almoſt that of thoſe expoſed to an active life of labour and buſineſs. In Germany, as many men almoſt are deſtined to the pen, the needle, the comb, and to ſupply the artificial wants of luxury, as to the plough, and the occupations requiſite to procure the different articles of food, and the other neceſſaries of life. Among a great part of mankind the body remains inactive; the thinking faculty is exerted at the expence of the health, and the imagination and ingenuity are thereby put excluſively into activity, to the prejudice of the general conformation of the powers of the ſoul, as well as of the conſtitution. All bodily exertion is prevented by machinery. In great cities, men are almoſt aſhamed to walk. There are ladies of the higher rank who will ſcarcely deign to touch the earth with their feet, by going a few ſteps into the garden. People have an averſion to every thing that requires exertion. Sedentary games have almoſt baniſhed thoſe which are connected with exerciſe.

There is ſcarcely any thing that tends more to debilitate human nature, than the unhappy paſſion for gaming. People ſpend whole nights, enchained, as it were, to the gaming-table, tormented with the moſt deſtructive paſſions, inſatiable avarice, envy, concealed anger, hatred, and the deſire of revenge.

The mode of life among the higher ranks is in direct oppoſition to nature and health: it is conſtrained and unnatural. 'By artificial wants, man has rendered himſelf unfit for his deſtination; he has perverted the order of things; ſleep is denied its right; the whole machine is refined by immoderate culture; but by theſe means becomes leſs durable. The mind

itſelf is ſoftened in the higheſt degree; and in regard to every thing great or exalted, nothing remains but affected ſenſations. Man has been deprived of every thing manly. He is no longer a ſon of nature, but a frail, feeble being, the creature of faſhion and convenience. His happineſs does not depend on himſelf, but on external things; even his health and his life ſeem to be productions of the world around him. So much has he loſt all ſelf-ſubſiſtence!

§ 243.

The greateſt enemy of the human race is luxury, with all its unhappy conſequences; ſuch as a rage for faſhion, miſdirected culture; a reſtleſs paſſion for ſhew and ſplendour; neglect of the higher duties, and even of the conformation of our beſt powers, amidſt trifling cares for poliſhing and partial formation. The conſtant companion of luxury is prodigality, and prodigality produces poverty; it is ſurrounded by an hoſt of murdering cares, which are increaſed, ad infinitum, by an exalted ſenſibility for all the paſſions; by ſtrong participation in the fate of one's connections; and by internal reproach. A thouſand ungratified real or artificial wants keep the mind in a continual ſtate of irritation and reſtleſs exertion.

§ 244.

POVERTY may be claſſed among the principal ſources of human wretchedneſs and debility; continual and exhauſting labour; inſufficient reparation of the powers; poor, indigeſtible nouriſhment; care, trouble, affliction; want of neceſſary relief in diſeaſe, and of thoſe refreſhing and ſtrengthening means

which the rich enjoy in ſuperabundance: what cauſes of debility, conſumption of the body, and of the vital powers! Size and ſtrength are both loſt under the burthen of poverty. Such a ſtate is the firſt expoſed to all diſeaſes, which, in the hovels of the poor, rage with the moſt infectious virulence, and produce the greateſt mortality.

§ 245.

How different is our preſent mode of life from that natural ſimplicity of our forefathers; and how much have we encreaſed the wants of our appetite, for which even Europe is too ſmall! The moſt pernicious circumſtance of all, is accuſtoming ourſelves to ſtimulating food, ſpices, ſpirituous and warm liquors. To this we may add, that, by the thirſt of gain, theſe liquors are adulterated, and rendered unheathful. Brandy, coffee, and tea, are by far too much uſed among all claſſes, and, unfortunately, have been ſubſtituted in the ſtead of beer, which is more healthful and nouriſhing. Slimy food and potatoes are uſed in great quantities, without that exerciſe which is neceſſary to make them digeſtible. From the irritating properties of ſuch food, by which the activity of the vital principle is immoderately increaſed, and by which congeſtions are occaſioned, while the organization is weakened, we may account for ſo many people being ſubject to extreme nervous debility, hypochondriaſis, accumulations of phlegm, and the utmoſt relaxation; even while their looks and complexion diſplay the bloom of health.

§ 246.

Intemperate living, the immoderate uſe of food

and drink, is ſtill becoming more general among the lower and labouring claſſes. The facility with which they can acquire a large ſum of money at once, (though the price of labour is not always proportioned to the high price of proviſions) induces them to ſpend their earnings in a ſhorter time; and as with ſenſual men the ſtomach is an important object, the pleaſures of the palate are indulged to exceſs.

Among thoſe things which contribute to the debility of the preſent race, may be reckoned the general propenſity to voluptuouſneſs, convenience, and indolence; the continual hunting after ſenſual enjoyments, which ſometimes degenerate into brutality, and by which irritability is increaſed, and the organization deranged, at the ſame time, in the utmoſt degree. The imagination is inceſſantly inflamed by laſcivious images; and the moſt violent ſtimulants are every moment exerciſing their pernicious action on the organs. Hence ariſe relaxation, exceſſive feebleneſs, unnatural ſenſibility, and incapacity for every thing that requires power and ſtrength; and, on the other hand, an inclination to reſt and inactivity; a continual hurrying from pleaſure to pleaſure, which, on account of habitual enjoyment, and being purchaſed without labour, inſtead of affording ſatisfaction, excites only languor and diſguſt. Among ſuch relaxed and enervated beings, Graham's celeſtial bed, and Meſmer's magnetiſm, might find friends and partizans.

Under ſuch circumſtances, the tone of the organization is ſo exalted, that repeated ſtimulants are neceſſary to prevent complete relaxation and debility, which immediately take place when the uſual ſtimulants

mulants are omitted. Such beings muſt be hatched and reared by artificial heat, like chickens; their exiſtence depends on a weak thread, and their life ſhakes like a reed agitated by the wind.

§ 247.

Neglecting the care of the ſkin, and bathing, by which our forefathers acquired life and ſtrength, tend the more to increaſe national debility, as the organ of the ſkin is of the utmoſt importance.

§ 248.

The great neglect of gymnaſtic exerciſes contributes no leſs to promote the ſame evil.

§ 249.

The many ill-choſen methods of ſtrengthening debilitated conſtitutions, which are employed unconditionally, produce a quite contrary effect to what they ought. To this head belong the imprudent uſe of bathing, and of mineral waters; the uſe of faſhionable medicines; alſo the perverted ſtrengthening method applied to the debilitated. Nothing weakens nature ſo much as the imprudent uſe of ſtimulating medicines, employed after one has followed a debilitating mode of life.

§ 250.

Bodily exerciſe, which is ſo uſeful in general, becomes pernicious if too violent, or when employed too ſuddenly in alternation with a ſedentary life. Violent hunting, travelling poſt, long continued and too lively dancing, do not certainly ſtrengthen; and ice-cold baths are undoubtedly not proper for feeble perſons.

The Anglomania, cold treatment, requires a high degree of ſtrength not to be prejudicial. And how will the phyſician reſtore to nature that ſtrength which can be obtained only by a prudent change of regimen? In vain will the enfeebled patient ſeek relief in baths and mineral ſprings, if they are employed merely in compliance with faſhion.

§ 251.

Equally pernicious is the improper uſe of all medicines and noſtrums, which is too common, on account of the encouragement given to quackery. The facility with which the empirics of the preſent period impoſe upon invalids, gives us reaſon to conclude that the number of debilitated perſons is very great; for debility is credulous.

§ 252.

This national degeneration is PERIODICAL, as we are taught by the hiſtory of many countries, and leads to the deſtruction of kingdoms. Thus Rome fell a prey to Aſiatic voluptuouſneſs and effiminacy; but an enervated period may be followed by one more vigorous. National debility has ſometimes been remedied by the deſperate cure of a revolution; and it has been ſeen that the fault did not lie in nature: the moſt effeminate people, by changing their manners and mode of life, have been transformed into men of the greateſt vigour. The ſpirit of liberty can rouſe an oppreſſed people from their phyſical torpor. Dr. Ruſh has ſhewn the effects produced by the American revolution on the phyſical ſtate of the inhabitants; many a barren pair became fruitful, and induſtry and activity were every where revived.

§ 253.

§ 253.

Theſe obſervations may ſerve to ſhew what influence it has on the character of a people, when their rulers endeavour to preſerve among them cheerfulneſs and contentment, with a general good diſpoſition of mind. This diſpoſition has the ſame effect in a whole nation that it has in individuals: It is beſt maintained by the principles of a Henry IV. who endeavoured to render the ſtate of his kingdom ſo flouriſhing that the meaneſt of his ſubjects might afford to have a pullet in the pot on Sundays. Such a cheerful diſpoſition may, even among an enervated people, prevent the conſequences of national debility. Falſe policy endeavours, by dazzling public feſtivals, to produce a tranſient excitement; but this is merely a palliative. I muſt, however, beg the reader's pardon for this digreſſion.

§ 254.

The prevailing diſeaſes of the preſent age are, for the moſt part, of the aſthenic kind, the conſequences of national debility. Far more ſthenic complaints prevailed among our anceſtors, ſuch as inflammatory diſeaſes. The form of diſeaſe has changed with each century; and, at preſent, it is very different from that common fifty or a hundred years ago. It has been modified by a changed method of life and conduct, and by ſome diſeaſes having become habitually common, as already obſerved in regard to ſyphilis. The combination of ſo many and ſo different cauſes, has given riſe to ſingular and uncommon affections, which are often in contradiction with each other. Diſeaſes have become exceedingly complicated and obſcure; phyſicians,

phyſicians, therefore, by ſo many new pathologic phenomena, which, however, properly ſpeaking, are only individual ſymptoms of a general diſeaſe, have been induced to invent new names for diſeaſes, to the great terror of the feeble; and, in regard to the phyſicians, they may ſay *oderint dum metuant*.

§ 255.

The following are the chief cauſes which have rendered the diſeaſes of the preſent period ſo complicated and difficult to be defined:

1. THE CHANGED CONSTITUTION OF THE BODY. In general, it is more aſthenic; and, conſequently, connected with immoderate irritability, and a deficiency in the power of action. Hence the ſympathy of individual organs is not only greater, but more excitable; and, on that account, there is more ſuſceptibility of morbid infection.

2. THE GENERAL PREDISPOSITION TO DISEASE. Thoſe diſeaſes rooted in the organic admixture, which have poiſoned whole generations; ſuch as the venereal diſeaſe, with all its varieties.

3. CHANGED MODE OF LIFE, intemperance, luxury, &c.

4. CHANGED METHOD OF HEALING. Our heroic method, and particularly the Brunonian ſyſtem, which by erroneous treatment does ſo much hurt, ſuppreſſes the criſes, and changes the progreſs of diſeaſe.

§ 256.

Alſo the change of the conſtitution through the different periods of life, is diſproportioned to the diſeaſes of each period. We obſerve in children the diſeaſes

diſeaſes of manhood; and in manhood, the diſeaſes peculiar to childhood. Likewiſe, in regard to ſex, diſeaſes which ought to belong only to females, prevalent among the men.

§ 257.

The moſt abundant diſeaſes of the preſent period, are nervous affections of every kind, which, in particular, are produced by the ſlighteſt cauſes: hypochondriaſis, oppreſſion at the ſtomach, pain in the bowels, rheumatiſm, inſanity, gout, lameneſs, ruptures, rickets, ſcrophula, atrophy, conſumption, diſeaſes of the mind.

CHAPTER VII.

ASTHENIC DISEASES.

§ 258.

ASTHENIC diſeaſes, diſeaſes from feebleneſs, are an unnatural ſtate of the animated organization, the grounds of which lie in an aſthenic prediſpoſition to diſeaſe.

This ſtate may be attended *(a)* either with ſome actual leſion of the organic parts, whether the cauſes be external or internal; or *(b)* a morbid change only may have taken place in the organic admixture. In the firſt caſe, the debility is permanent; in the ſecond, only temporary. In both, the functions of the animated body are more or leſs weakened, and ſometimes deranged.

(a) Severe wounds, or violent derangement of the organs, particularly leſion of the principal organs of life, as, for example, ulcers in the lungs.

(b) Putrid fevers, and other diſeaſes, where reſtoration to health follows when the organic admixture reſumes its proper ſtate.

§ 259.

The ſymptoms of theſe diſeaſes announce deficient energy of nature; enfeebled or oppreſſed activity of the vital principle; irregular, too weak, or too ſtrong criſes; peculiar affections in the principal vital organs.

We

We find here, in particular, all thoſe ſymptoms which ſhew nervous debility (§ 201.)

The chief point, in this reſpect, is not the name, but the form of the diſeaſe. A diſeaſe under the ſame name may aſſume the ſthenic, as well as the aſthenic form, as is the caſe with the dropſy*. A ſthenic diſeaſe alſo paſſes very often into an aſthenic. Attention to this remark cannnot be too ſtrongly recommended, in order to guard againſt the many pernicious practical errors which ariſe when diſeaſes are claſſed according to their names. A diſeaſe is ſthenic, or aſthenic, inflammatory, gaſtric, or nervous, according to the cauſes, the conſtitution of the patient, and other accidental circumſtances.

§ 260.

In order to form a proper idea of an aſthenic diſeaſe, it will be neceſſary to pay attention to different circumſtances, by which it acquires that form.

1. BODILY CONSTITUTION. Under this term are comprehended the bodily maſs, form, and ſtructure of organic parts. In a feeble or debilitated body, all diſeaſes acquire a certain ſhade of aſthenia. To this head belongs unexpanded, imperfect organization. Thus, the firſt diſeaſes of children are, by their nature, aſthenic. This is the caſe even with local diſeaſes, where there is an imperfect conformation of individual organs; alſo when the conſtitution is weakened by accidental cauſes.

2. AN ASTHENIC PREDISPOSITION. This depends on a feeble ſtate of the vital principle, as well as of

* Benj. Fürcht. Ziegler Diſs. inaug hydropis-aetiologium ac diviſionem ſiſtens, Lipſiæ, 1798, deſerves, in particular, to be read.

of the organization (§ 101—119.) It consists in a certain external or internal state of the human frame, which announces a general debility of its nature, some time previous to the appearance of asthenic affections. This unnatural constitution of the body is attended with the greatest sensibility in regard to external debilitating causes; where this state exists, either asthenic diseases are to be expected, or the diseases which attack the human frame in this state are asthenic, or at least have a shade of asthenia.

3. THE PERIOD OF LIFE, according as it is more or less fitted for an asthenic disposition, as the first and last periods. The nearer man is to his beginning or end, the more he is subject to asthenia.

4. THE SEX. We find, in general, more asthenic diseases among women, which are rather the consequences of their mode of life, than of their bodily constitution.

5. PREVIOUS STATE. We must here take into consideration former habits and mode of life, whether tending to promote asthenia, as, for example, severe bodily labour, with food destitute of nourishment; also preceding diseases: these are either of the asthenic kind, and, therefore, announce an existing predisposition to feebleness, or by their duration and violence have debilitated the body. In such a case, the new diseases which succeed, especially if they soon follow those which preceded them, will naturally assume an asthenic form.

In general, we include here all the before-mentioned remote causes of asthenia (§ 218—234.)

6. ABSOLUTE DEBILITATING STIMULANTS give occasion to asthenic diseases, even where there is a

sthenic

ſthenic prediſpoſition; for example, external injury, poiſon, violent fear.

7. THE PREVAILING ASTHENIC MORBID CONSTITUTION OF THE SEASON. Thus, in ſummer, there are more aſthenic, and in winter more ſthenic diſeaſes.

§ 261.

In aſthenic diſeaſes we find the functions of the body more or leſs weakened or deranged: many of them ſuffer in a particular manner; and the more this is the caſe, or if the principal ones ſuffer, the greater is the degree of aſthenia.

§ 262.

In aſthenic diſeaſes, in general, irritability and the power of action ſuffer at the ſame time. They are both depreſſed and weakened. In ſthenic diſeaſes, on the other hand, either one of them only ſuffers, or irritability is heightened in an immoderate degree. Thus we ſometimes find enfeebled irritability, when the power of action is not weakened.

The aſthenic diſeaſes may very properly be reduced to the following claſſes:

1. DISEASES FROM AN EXCESS OF IRRITABILITY AND ENFEEBLED POWER OF ACTION; for example, ſpaſms, and particularly thoſe which ariſe after great exhauſtion by violent pain or immoderate ſtraining of the powers. To this head belongs the hiccup of dying perſons.

2. DISEASES FROM WEAKENED POWER OF ACTION, AND DEFICIENT OR BLUNTED IRRITABILITY. To this head belong all cachexies, diſeaſes in which the admixture of the juices is ſo corrupted that the organs

loſe

loſe a great part of their ſuſceptibility for ſtimulants, as dropſy, ulcers, by which the body either decreaſes, or acquires ſpongy bloated fleſh; alſo obſtructions in the lymphatic veſſels, ſchirrous tumours of the glands, &c.

3. DISEASES FROM IRRITABILITY WEAKENED IN THE EXTREME DEGREE, AND WEAKENED POWER OF ACTION; for example, typhus, diſeaſes attended with violent evacuations, flux, ſtrong hæmorrhages, where the power of motion ſuffers.

4. DISEASES FROM OPPRESSED OR DESTROYED IRRITABILITY, WHEN A CERTAIN DEGREE OF THE POWER OF ACTION EXISTS; as, for example, different nervous diſeaſes.

5. DISEASES FROM OPPRESSED IRRITABILITY, AND POWER OF ACTION; for example, fainting, and apparent death.

6. DISEASES IN WHICH THE ORGANIZATION IS MECHANICALLY OR CHEMICALLY INJURED. This injury relates either to the ſolids or the fluids; may ariſe from external as well as internal cauſes, from violence, or from irregularity in the bodily functions. The natural conſequence, therefore, is an enfeebled ſtate of the organization. This injury, as far as is conſiſtent with the duration of life, may take place in individual organs. There are different degrees of it: the injury is either ſuch that the influence of the vital principle on that organ is impeded, or rendered not totally impoſſible; that is, irritability and ſuſceptibility for the vital principle are not entirely deſtroyed; or the organ is incapable of animation, either for a certain period, or for ever. The firſt caſe is lameneſs; the ſecond death. If the influence of the vital

vital principle be impeded, the conſequences are, irregularity in the organic functions of the part; relaxation and ſluggiſhneſs of the muſcular powers; leſſened ſecretion and excretion. If the ſolid parts of ſuch an organ are ſtill ſoft, not completely formed, while the body is in a progreſſive ſtate of growth, there eaſily ariſe from external cauſes, on account of the coheſion being leſſened, deformities and crookedneſs of the bones; but, in general, a bad or diſproportioned formation of individual parts will be occaſioned. The moſt ſtriking inſtance of this is afforded by the rickets; the pliability and twiſting of the bones; retarded growth and conformation of the body; the unnatural formation of various parts, and even of the bowels of the lower belly; the extraordinary ſoftneſs of the bones and muſcular parts, and diſſolved juices, as they are found after death.

An inſtance of chemical injury in the organization, a caſe where not only the influence of the vital power is more or leſs withdrawn from the body, but the operation of the chemical powers becomes expoſed to unnatural changes, is afforded by LAMENESS. An account of the cauſes of this aſthenic form of diſeaſe will make this mode of explanation more clear. Lameneſs ariſes both from external cauſes, violent derangement of organic parts, and from internal cauſes, which attack the nerves, the inſtruments of the vital principle. Lameneſs conſiſts either in a deficiency of the vital principle in an organ, or in a total interruption of it; ſo that the lamed part is altogether ſeparated from the animated parts of the body, and dies; as corruption, the free action of the chemical powers, then takes place. In the lamed parts, irritability, and

the power of action are loſt; and, at laſt, the connection of the animalized admixture with the vital principle. As long as the latter exiſts, a cure is poſſible. In general, irritability firſt returns, and then the power of action.

§ 263.

The idea of lameneſs has a greater extent than what is given to it in common; it muſt be conſidered as a general form of diſeaſe. What takes place in regard to lameneſs in individual organs, is manifeſted in regard to the organization of the body, in geral, in apparent and actual death. All the ſyſtems and organs, according to the above definition, are ſubject to lameneſs. There is a lameneſs, therefore, not only of the external members, a lameneſs of the muſcular powers, but a lameneſs of the nervous ſyſtem, of the blood-veſſels, &c. alſo a lameneſs in individual organs; of the organs of digeſtion, of the organ of the ſkin, of the organ of the ſoul, &c.

§ 264.

Local aſthenic diſeaſes are thoſe which attack individual organs; which in theſe have their peculiar ſeat, and manifeſt themſelves under the general aſthenic form. They are connected partly with mechanical, and partly chemical injury of the organs, and ariſe from external as well as internal cauſes. To this head belong tumours, ulcers, increaſed evacuations, hæmorrhage.

§ 265.

Moſt chronic diſeaſes aſſume an aſthenic form, as the

the body is weakened by the duration of the diſeaſe. Chronic diſorders are called forth, in particular, from the aſthenic prediſpoſition.

§ 266.

As this work comprehends only the general aſthenic ſtate, I ſhall paſs over the ſpecial pathology of aſthenic diſeaſes. This general ſketch may be ſufficient for the plan of the firſt part: a further illuſtration of the ſubject is reſerved for a third.

CHAPTER VIII.

RELATION OF ASTHENIA TO THE DURATION OF LIFE.

§ 267.

FEEBLE life resembles a flame which gleams weakly, either through want of nourishment, or on account of the unfavourable influence of external causes. If the quantity of nourishing matter be small, the flame will soon be extinguished, particularly when large; and if it be fanned by the air, it will consume its small stock of nourishment the sooner.

§ 268.

In general, feeble life is of shorter duration:

1. ON ACCOUNT OF ITS SMALL STOCK OF THE VITAL PRINCIPLE, WHICH IS SOON EXHAUSTED.

2. ON ACCOUNT OF THE DANGER WHICH ATTENDS A WEAK CONSTITUTION. How easily is the frail thread of life broken! Reaction is incapable of withstanding the violent action of the different powers.

3. ON ACCOUNT OF THE TOO GREAT ACTIVITY OF THE VITAL PRINCIPLE, by which the organization is internally wasted. In this case there is a speedier consumption of the small stock of the vital principle; a violent straining and waste of the organic parts themselves, especially in those organs in which the vital principle is particularly active. It is not necessary that there should be here an unnatural, irregular activity

activity of the vital principle, as in diſeaſe; for a ſomewhat increaſed activity of it, where there is feeble life, will ſhorten its exiſtence.

4. ON ACCOUNT OF A DEFICIENCY OF THAT ACTIVITY OF THE VITAL PRINCIPLE NECESSARY FOR MAINTAINING LIFE. In this caſe the functions of life are performed in too ſluggiſh a manner; the buſineſs of abſorption, reſorption, nutrition, &c. is confined, and the conſequences are obſtructions and congeſtions, which all haſten the diſſolution of the animal machine. The want of activity in the vital principle may either ariſe from a ſmall ſtock of that principle, or be occaſioned by external cauſes, which prevent the manifeſtations of the vital principle, as in the caſe of apparent death. When this ſtate continues too long, it at laſt paſſes into a complete ceſſation of life; though apparent death, or rather a pauſe of PERFECTLY ACTIVE LIFE, may be a cauſe of the longer duration of its exiſtence. Digeſtion is carried on too ſlowly; the body is not ſufficiently nouriſhed, and too few nutritive particles are extracted from the food. Notwithſtanding a deſire for, and the uſe of food, extenuation and feebleneſs enſue.

5. ON ACCOUNT OF A DEFICIENCY IN THE REPARATION OF NOURISHING MATTER. This is exactly the cauſe why every flame muſt at laſt be extinguiſhed. Reparation either fails entirely, or is diſproportioned to the loſs; ſo that leſs nutritive matter is preſent than the great conſumption occaſioned by the violent activity of the vital principle would require. Hence extenuation, deſiccation, and withering of the body.

6. ON ACCOUNT OF DEBILITATING INFLUENCES the vital thread becomes, as it were, always ſmaller,

eſpecially when pernicious powers continually exerciſe their action on life. Theſe powers ſhorten life, either by too violent excitement, or by a deficiency of the excitement neceſſary for its duration.

Immoderate, too violent, and in particular too long continued excitement, produces an immoderate activity of the vital principle, by which the principle itſelf is ſoon exhauſted. The functions alſo of the body are carried on with too great activity, ſo that an immoderate ſtraining of the organs follows, and is accompanied with the greateſt conſumption of the body. Feebleneſs, therefore, is not only produced, but maintained, during the continuation of this immoderate excitement. Life, for its duration, requires, from time to time, ſtronger excitement, in order to give to the powers new activity; elſe the conſequence will be relaxation and ſluggiſhneſs. Every man requires to be rouſed and exhilarated by ſocial enjoyment, that a new impulſe may be communicated to the inactive machine. Such agreeable excitement, renewed periodically, affords the beſt means for maintaining and prolonging life. However little may be neceſſary for ſimple nature, uncorrupted by habit, yet ſuch exhilaration and excitement cannot be altogether diſpenſed with. Mere changes, or ſmall deviations from the common mode of life, act as ſtimulants, and prevent that relaxation and languor occaſioned by continual uniformity. Civilization has multiplied theſe ſtimulants, and in an eminent degree has made them abſolute wants; but they have become ſo to an exceſs highly pernicious in many perſons, whoſe ſuſceptibility of irritation, in regard to the more moderate ſtimulants, is by far too much blunted; ſo that exceedingly violent and ſtrong ſtimulants, the greateſt devia-

tions from common habit, are neceſſary for their enjoyment of life, and even for ſupporting it. Excitement from ſuch ſtimulants gradually becomes habit.

A deficiency of the natural, as well as of theſe artificial ſtimulants, excites and maintains the aſthenic ſtate.

In the laſt place, debilitating powers act mechanically in deſtroying the organs; as, for example, external wounds, ulcers, caries of the bones, &c.

7. The ORGANIZATION alſo muſt be here taken into conſideration. Life itſelf ſuffers by every thing which attacks the organic parts, whether the cauſes be external or internal, and by which theſe parts are either deranged and deſtroyed, or their coheſion is leſſened; the admixture of their component parts unnaturally changed, and by theſe means the influence of the vital principle on theſe organs, the irritability and ſuſceptibility of irritation peculiar to them are either annihilated or oppreſſed, or modified in a different manner. It is, however, moſt prejudicial to the duration of life when theſe changes take place in any of the principal organs. Such diſeaſes are of ſhort continuance, and ſoon end in reſtoration to health, or in death; for example, diſeaſes of the lungs, diſeaſes of the glandular parts, as cancer in the breaſt, &c. There are ſome chronic diſeaſes, however, of theſe organs, which terminate ſooner than the violent diſeaſes of other organs, which do not immediately ſerve for the operations of life. On the other hand, ſuch changes may take place in leſs animated organs: they weaken the body; and the conſequences are, extenuation, great waſte of the juices, and many other aſthenic affections; yet life holds out for a conſiderable time.

The concurrence of a few or more of these debilitating causes is peculiarly dangerous to the duration of life: such, for example, as violent evacuation, where there is deficient reparation by nourishment; powerful stimulants, which excite an immoderate activity of the vital principle; and, at the same time, debilitating irregular diet. On the other hand, individual debilitating causes may be obviated by the strengthening effects of others; and under these circumstances feeble life may endure a long time. These debilitating causes tend chiefly to shorten life by their continuance; especially when no intermediate pauses for rest and reparation take place: when the action of consuming, violent stimulants is so incessantly exercised, that during the whole time, whatever may be the activity of the power of assimilation, more is lost than can be supplied.

§ 269.

But how can we explain the phenomenon, confirmed by repeated experience, that men even with an exceedingly weak constitution, and when exposed to the most debilitating causes, sometimes drag out their lives to a very long period? Their existence seems to be suspended by a single weak thread, exposed to the danger of being broken by the first agitation; and yet it continues long in that state. Many sickly, wretched, haggard, pale beings, who stalk about like ghosts, prolong their lives under these circumstances to an almost incredible period. While many a blooming youth and man, in the vigour of health, sink into the grave around them, such beings often live to a great age, even when confined to the bed of sickness with evils of every kind, and reduced to a

state

ſtate of deſiccation like a withered plant. Their vital thread, like fine gold wire, is extended farther year after year; yet they ſtill find pleaſure in the world, and they even revive ſometimes, for a certain period, and begin again to bloom and as it were to grow young. It may with juſtice be ſaid, that ſuch people have a tough life.

It is incredible under what unfavourable circumſtances the life of man can continue, provided it has any where an anchor to which it may adhere. The tranſition from life to death, except in caſes of violence, takes place very ſlowly. Even when a perſon is half dead, the principal organs ſtill continue to live. There are men who are dying for years. The deſtruction of individual organs, the gradual departure of the vital principle, which is announced by hebetude, inſenſibility, and rigidity, what elſe is it than the commencement of death? And what elſe is death than an incurable diſeaſe?

Man is like a tree, which, as years increaſe, always takes deeper root in the earth. If his conſtitution be ſound and complete, the greater will be the attachment of the vital principle: it is, as it were, ſo accuſtomed to life, that it cannot ſeparate from it. Violent cauſes excepted, ſuch a life continues very long; there is always ſomething to which it adheres. It ſeems to be a principle in human nature, that old people have an averſion to leave the world; they have been ſo intimately connected with life, that to tear the band which unites them is painful. The laſt attack of death, at a great age, ends indeed very ſoon, becauſe the vital power is already greatly exhauſted; but the mortal diſeaſe, the *maraſmus ſenilis*, proceeds very ſlowly.

In

In dying, the higheſt degree of aſthenia, we always obſerve a ſtrong attachment of the vital power, which is not extinguiſhed till the complete deſtruction of the organiſm, when the thiero-chemic powers begin their free operation. Often, where we ſuppoſe death to have taken place, there is only apparent death. Sometimes the ſtock of vital power is ſo exhauſted, that it is no longer able to exerciſe a general action in all the organs, and is only active in individual organs; or rather we do not obſerve it manifeſt itſelf on the ſurface of the body. Sometimes, alſo, the vital principle is in a fixed ſtate, as in apparent death, while internal life is complete*. This attachment of the vital principle is found in an eminent degree where the organization is well conſtituted; where there is great extenſibility and elaſticity of the fibres, and where there is an intimate and good admixture of the organic component parts. Hence we may explain why children are ſo long in dying.

We know, from a variety of experiments, that even in the utmoſt aſthenia the vital principle can produce a great effect on the body, when excited by powerful ſtimulants. A glaſs of wine will revive the feebleſt and moſt debilitated patient in a putrid fever. The moſt active are mental ſtimulants, which excite the vital principle even in thoſe who are dying. We are told by Marcus Herz, that a man who died of a ma-

* Apparent death, in my opinion, may not improperly be divided into the following kinds: 1. Apparent death with actual feeble and imperfect life. To this kind belong, a) the apparent death of weak, new-born children; b) the apparent death of thoſe half dying at a very great age. 2. Apparent death when internal life is perfect. The vital principle in the interior of the organs is in full activity, though the leaſt external trace of life is not perceptible.

lignant

lignant bilious fever, and whoſe laſt breath was already hovering round his lips, was kept alive twenty-four hours longer than otherwiſe would have been the caſe, by a friend whiſpering in his ear, every quarter of an hour, that an enemy, with whom a little before his illneſs he had been engaged in a violent quarrel, had been turned out of his office*.

§. 270.

I ſhall not, I hope, wander from my object, if I here ſay a few words on the cauſe why many perſons are ſo long in dying. It has been obſerved, not unfrequently, that men, notwithſtanding the moſt ſevere ſufferings, and even when the body is moſt dreadfully mutilated, when the moſt important organs are injured, and amidſt the moſt frightful convulſions, in a ſituation which makes every man of feeling ſhudder, cannot die, but ſtruggle with death day after day, and, though they have ſeveral times been actual corpſes, return again to their melancholy exiſtence. The cauſes are:

1. IN REGARD TO THE ORGANIZATION, complete conformation of the organic parts, in which the vital principle exerciſes its action unimpeded, and can diſtribute itſelf throughout them in a more perfect and uniform manner. Such an organization is attended with a greater degree of irritability. Now, if nature be chiefly employed with the conformation of the nobleſt parts of the body, ſuch as the brain, where the greateſt activity of the vital principle takes place, ſuch an eminently animated organ will be a ſource of

* Marcus Herz Verſuch über der Schwindel.

life,

life, which on that account will be deficcated the laſt; and this alſo may ſerve to ſhew why children are ſo long in dying.

The nature of that conſiſtence of organic parts, capable of producing the greateſt attachment of the vital principle, has been already mentioned.

The ſtructure of the body is here alſo to be taken into conſideration. Deformity; crookedneſs of the bones; a ſtructure or form of individual parts different from the common; an uncommonly high breaſt, by which the lungs, in ſuch a wide cheſt, have much room for dilatation, and where breathing can conſequently be longer continued than when the cheſt is flat, &c.

2. IN REGARD TO CAPABILITY OF LIFE. The vital principle ſhews for many kinds of organization a very peculiar attachment, and therefore does not depart from ſome bodies ſo eaſily as from others. This attachment is greater alſo in many individual organs than in others, ſo that the former have life in them a long time after the latter are dead. The vital attachment is greater in thoſe organs which contain a larger portion of nerves or blood-veſſels, and conſequently is greateſt in the brain and the heart. But as theſe principal organs of life are connected with all the other organs, they always communicate their life to the reſt of the body as long as any of it remains.

3. IN REGARD TO THE STIMULANTS WHICH EXERCISE AN ACTION ON THE BODY.

As long as any of the vital principle exiſts in the body, it will be excited by ſtimulants; and this will ſucceſſively take place till it be completely exhauſted. By this excitement a longer attachment of the vital principle

principle will be effected in individual organs than would otherwiſe have been the caſe. The inſtance already mentioned, (§ 269.) of death being retarded by revenge, may ſerve as an illuſtration. A like effect may be produced by phyſical ſtimulants, whether applied to the ſurface or to the interior parts of the body. The blood is here to be taken into conſideration among the internal ſtimulants. By it life may be retained for a certain time.

§ 271.

We ſhall now return to our main object, and conſider the duration of life, not only where there is an aſthenic conſtitution of body, but alſo when the body is expoſed to debilitating cauſes. A great deal, no doubt, depends on the bodily conſtitution, as there are ſome bodies that do not loſe their vital principle under circumſtances, which, if applied to others in a leſs degree, would produce mortal effects. Theſe debilitating cauſes may occaſion a very conſiderable degree of aſthenia, and yet life may not diſappear, or may maintain itſelf, in an aſtoniſhing manner, for a conſiderable time. It is almoſt incredible how much man can endure, eſpecially when the body has been hardened by habit. Neither the moſt violent exerciſe nor the ſevereſt labour, the moſt acute pain nor the moſt inflammatory or tedious diſeaſes, accompanied with the moſt dreadful ſymptoms; neither the violent convulſions nor contorſion of the limbs, as in St. Vitus's dance, or from the horrid pain occaſioned by the ſurgeon's knife, or even from the greateſt anguiſh produced by diſeaſe, as in the convulſive aſthma; neither extreme extenuation, which ſcarcely leaves any thing but

but ſkin and bone, nor cold or heat, is able to expel life from the body, or it maintains itſelf for a long time, notwithſtanding all theſe unfavourable circumſtances. In the like manner, priſoners can endure peſtilential air, which, even when conveyed from their clothes, is mortal to others.

The life of man ſupports itſelf in every climate, and endures the moſt ſudden variations of temperature; old perſons are found even in the unhealthful climate of Bengal. The duration of life is the ſame in every zone, though there are every where exceptions. Upon the whole, feebleneſs in general does not ſeem to ſhorten life. Even a feeble ſickly life, taking every thing into conſideration, continues a long time; and ſome men, whoſe mode of living was certainly not favourable to health, and which they even found prejudicial to the body, have attained to a great age. In all periods of the world there have been inſtances of longevity, whether mankind led the ſimple life of nature, or paſſed their days in the boſom of luxury, a prey to artificial wants. Some have even become old amidſt debauchery and diſſipation. That artificial life, produced by exceſſive luxury, under ſo many unnatural influences, becomes habit; ſo that the vital power, taken in the whole, attaches itſelf as long to an effeminate enervated body as to the ſoundeſt, ſtrongeſt body of a ſailor or ſoldier. No objection, however, can be hence deduced againſt the diætecic art; it is ſtill certain that by ſuch an unnatural mode of life the health is deſtroyed. This obſervation ſerves merely as a proof of our poſition.

But whence ariſes ſuch diſproportion between aſthenia and the duration of life? Let us endeavour to reſolve this problem.

§ 272.

§ 272.

In feeble life itſelf lies the cauſe of its duration. Where there is feeble life, there is leſs activity of the vital principle; conſequently the conſumption of the vital principle is leſs, and the organic parts do not ſuffer from violent exertion. Though the body is enfeebled, the machine hangs together, becauſe it is never put into violent motion. The caſe indeed is totally different where, with debilitated organs, there is an immoderate activity of the vital principle. Where vital activity is not too great, the functions are performed more ſlowly, and by theſe means the excitement is leſs; the movement of the heart is ſlower, and muſcular motion requires leſs exertion. On account of all theſe cauſes there is leſs waſte of the vital principle; and its ſlender ſtock is economically uſed, ſo that it holds out longer than when the body is ſtrong and robuſt, with immoderate vital activity.

§ 273.

Another cauſe of the duration of feeble life is the STRONG POWER OF RESTORATION, by which the loſs is ſoon repaired, and repaired well and ſimultaneouſly. In this caſe there is a perfect activity of the ſyſtems of digeſtion and abſorption, though the conſumption is very great. Thus, notwithſtanding every debilitating cauſe, life may hold out for a conſiderable time.

§ 274.

If animalization and aſſimilation be carried on well, and if the nouriſhment be eaſily and ſoon converted into organic and component parts, life, even when there

there is little acceſſion, either externally or internally, will continue a long time, if the means of ſupport be ſparingly uſed.

§ 275.

LESSENED SUSCEPTIBILITY OF IRRITATION is beneficial for maintaining feeble life. The action of external debilitating impreſſions is leſs felt, and becomes leſs hurtful. Hence it happens, that people in the moſt diſeaſed ſtate are ſometimes able to endure much more violent excitement than when in perfect health; and for this reaſon the ſtrongeſt medicines, in many diſeaſes, ſcarcely produce any effect: in ſuch a ſtate the moſt powerful ſtimulants are often neceſſary. Reaction is oppreſſed or weakened. In the firſt caſe, ſtronger ſtimulants will be endured; in the ſecond, the application of ſtimulants requires the utmoſt caution, that the ſmall ſtock of vital principle may not be exhauſted at once by too violent ſtraining. Hence the important difference in the mode of treating the two periods of aſphyxia, complete apparent death, oppreſſed irritability; and the firſt manifeſtations of vital activity on the commencement of a return to life, therefore weak ſuſceptibility of irritation.

From weak ſuſceptibility of irritation the continuance of life, under the feebleneſs of old age, may in part be explained. It may proceed to apathy and inſenſibility.

Suſceptibility of irritation may be greatly leſſened in ſome of the principal organs; and yet, in conſequence of certain concomitant circumſtances, may contribute to the duration of feeble life, and perhaps more

more than when it is general, in which caſe it is a ſymptom of greater debility. Thus the irritability of the organ of the ſoul may be lowered, and human nature be thereby ſecured from many pernicious influences; as, for example, from the deſtructive influence of the paſſions. This indolence we find in old people. Thus the ſuſceptibility of irritation in the lungs may be ſo leſſened that people will ſuffer leſs from the influence of ſome pernicious kinds of air.

Suſceptibility of irritation is leſſened by hardening and habit.

It is of importance to make a diſtinction between leſſened and weakened ſuſceptibility of irritation. Though irritability be leſſened ever ſo much, and though it be totally loſt in individual organs, the body may ſtill contain a ſufficiency of the vital principle, which may only be prevented from manifeſting itſelf as in the caſe of apparent death; but when ſuſceptibility of irritation is actually weak, that is, when there is a deficiency of irritability, there is alſo a want of vital principle. This is the caſe in the feebleneſs of thoſe at the point of death. This may be illuſtrated by the example of old people. In the feebleneſs of age, which in vigorous old people is relative, we obſerve in individual organs an inſenſibility and hebetude; as for example, loſs of ſight and of hearing; but other vital functions in ſuch perſons are ſufficiently active; they digeſt well, &c. On the other hand, at the greateſt age, when a great decreaſe of the vital principle takes place, we obſerve alſo deficient ſuſceptibility of irritation, which is ſeen chiefly in the organs of the ſenſes; but in that caſe the weak ſuſceptibility of irritation is general,

arising from a loss of vital principle. In the last case, deficient susceptibility of irritation can contribute nothing to the duration of life.

§ 276.

Individual organs may have a particular susceptibility for certain properties of the vital principle; so that, for example, irritability will continue longer in one organ than in another. This also is a concurring cause of the prolongation of life, even where there is a great degree of feebleness.

§ 277.

Man stands in a still higher spiritual relation, which tends to prolong his life, and which, even when his physical relation has a preponderance, prevents, for some time, the total loss of the vital principle. We have already explained the connection (§ 65.) which the soul has with the vital principle. A great deal, therefore, may be expected on this side in regard to the maintenance of life, even where there is the greatest debility. The bodily powers may be long maintained by the influence of the soul, though many debilitating causes may, at the same time, exercise their action on the organization. Without admitting stahlianism, we may assert the reality of this spiritual operation on the physical part of man. The more perfect and better conformed the power of the soul is, the more it serves for maintaining life: it is then susceptible of so many agreeable stimulants, of so many mental pleasures and moral enjoyments, which give a new impulse to life, and exalt the activity of the vital power. In particular, more life is given to the business of animalization

zation and aſſimilation; and, notwithſtanding many unfavourable circumſtances, a reſpite is thus procured to feeble exiſtence. Increaſed activity of the mental powers may, in certain caſes, ſerve for maintaining feeble life, as by the greater activity of the vital principle on the organ of the ſoul, its immoderate and too violent activity on other organs, and conſequently the conſumption of the vital principle itſelf, as well as of the organic parts, is leſſened. (§ 272.) This influence of the organ of the ſoul, in maintaining life, is particularly perceptible in men who are accuſtomed to put the power of their ſoul into great activity, by which the irritability of that organ is exalted to a very high degree. By mental impreſſions the tone of their whole phyſical nature is animated; activity of the organs of thought becomes to them a real want; their whole life is a thinking life. Thus lived Haller till his ſeventy-ſixth year.

A perfect conformation of ſoul will contribute more to the maintaining of feeble life, where man is capable of the uſe of reaſon, by which means, with proper attention, he is able to guard againſt thoſe things which are pernicious, and can employ thoſe which are ſalutary; and here a knowledge and obſervation of his individual moral and phyſical ſtate will be of ſervice.

The longevity of ſo many literary men may ſerve as a proof of the truth of theſe obſervations.

§ 278.

In this reſearch, the conſtitution of the organization is particularly to be conſidered.

Man, of all animals, has the moſt perfect organization; it is the moſt complete work of the animal creation, and is therefore ſuſceptible of the moſt com-

plete life. The innumerable organs which conſtitute the ſyſtem of the phyſical nature of man, their delicate ſtructure, and their mutual connection, make them ſuſceptible of a large ſtock of vital principle, and, at the ſame time, ſecure to it the moſt unconfined activity. This perfect organization renders man the moſt acceſſible to every vital ſtimulus from without, and hence ſuch an infinite number of occaſions for exciting and maintaining the vital principle externally. There are ſtimulants, therefore, for human life, when animal life no longer receives any impulſe from without. Thus the vital principle, even where there is the higheſt degree of irritability, can be always re-animated. The more perfect nature of the organs renders them alſo much fitter to maintain longer the internal activity of the vital principle; and hence there are ſo many means of ſupporting life. Every thing that ſurrounds us, every thing that has a relation to our ſpiritual and phyſical life, may co-operate to the maintenance of our exiſtence. When the common paſſage for nouriſhment through the œſophagus is ſhut, ſomething may be done towards preſerving life by the application of certain means to the ſurface of the body. (§ 482.)

§ 279.

Perfect conformation of individual organs makes them fit to be acted on by the vital principle. Each individual organ is of itſelf ſuſceptible of life, and has, as it were, its own vital principle. As long as the chief organs of life are not injured, ſuch an individual organ will have its own life. When individual organs, therefore, are annihilated, the vital principle ſtill

ſtill remains behind in the body. It is aſtoniſhing to ſee what important organic parts may be deſtroyed without prejudice to life.

§ 280.

Another cauſe of the duration of aſthenic life is the GENERAL VITAL SUSCEPTIBILITY EXISTING IN THE ORGANS, when no principal organ has totally loſt its ſuſceptibility for the vital principle. Though life may be feeble, and though the body may have ſuffered by diſeaſe, even under theſe circumſtances a longer continuance of life is to be hoped. On the other hand, no good prognoſis can be formed when ſeveral organs, and particularly the chief organs, have been deſtroyed or rendered uſeleſs and unſuſceptible of the vital principle. This is the caſe in lameneſs of the organ of the brain; injuries of the organs of generation. There is no inſtance of an eunuch having ever attained to a great age.

Perfect life, or at leaſt greater vital activity, in any of the organs, is, in a particular manner, the means of vital ſupport. Life, therefore, may ſtill continue, when individual organs are injured, or have ſuffered by the feebleneſs of age or diſeaſe. I muſt here call to the reader's remembrance what has been ſaid of the organ of the ſoul (§ 277.) as well as of the great vital activity of the organs of the brain in children (§ 270.) We find in people who have attained to a great age, as in the caſe of Thomas Parr, the ſtomach and the organs of generation in an excellent ſtate.

§ 281.

A good ſtructure of the organs makes them pecu-

liarly fit for the action of the vital principle. Under this head is comprehended a firm consistence of the solids, and an intimate admixture of the fluids, capable of withstanding pernicious debilitating influences, both externally and internally. Thus strong blood-vessels withstand the continually violent motion of the blood; and a good structure of the bones secures them from external injuries.

§ 282.

It is not, however, a solid organic consistence alone that withstands destruction; elasticity, pliableness, and extensibility of the vessels, produce the same effect, (§ 162.) and often much better than the strongest bodily structure. Hence the long duration of feeble life in women and children.

§ 283.

The consumption of life is particularly retarded by every thing that lessens the too great activity of the vital principle. The periods of lessened irritability, as well as of other lessened manifestations of the vital principle, serve for the reparation of what has been lost; and even when this reparation is impossible, the too great consuming vital activity of existence requires a pause. Sleep and rest are the chief retarding and restoring means of life. Rest effects this object, and produces lessened vital activity in the organs in general, as well as in individual organs. In the last case its influence is greater when the activity is lessened in one of the principal organs, as for example, in the organs of the thinking faculty. Hence mental rest contributes greatly to the extension of life, and even of feeble life.

life. The leſſened exertion of the powers retards vital conſumption. The reſt which ſick perſons enjoy in bed contributes to the ſame end, becauſe the irritability of the muſcular powers is leſſened.

Regular and ſufficient ſleep ſerves, on the one hand, for repairing the loſt powers, and on the other, for leſſening conſumption by leſſening vital activity. Hence the lives of people, who are expoſed to the moſt debilitating fatigue, may be prolonged to a conſiderable age, when they enjoy ſleep in its full extent.

§ 284.

Even apathy and reſt, that produces complete inactivity, may, in certain caſes, prolong life for a certain period. Such is the vegetation in the extreme age of very old perſons, who ſeem as if fixed motionleſs to one ſpot; and in whom, except the uſe of food, ſcarcely any other of the vital functions are obſerved, and who continue for years in this ſtate.

§ 285.

We may mention, as no leſs applicable to the preſent ſubject, the caſe of complete external inactivity of individual organs, in conſequence of the manifeſtations of the vital principle being ſuppreſſed, or partial apparent death. Even in this ſtate, we obſerve an extenſion of exiſtence; as for example, by inactivity in the organ of the ſoul, deprivation of conſciouſneſs. To this head belongs ſuppreſſion of the activity of individual powers; as for example, the power of digeſtion; the power of generation, &c. as we obſerve in diſeaſes; and by which the greater conſumption of the vital power is checked. This may be ſerviceable,

in particular, in cafes where too much vital activity exifts in fome other organs, as the waſte of powers would otherwiſe be too great if it extended to more of the organs.

By continuance, ſuch periods of ſuppreſſed vital activity end in actual death.

§ 286.

A principal point to be conſidered, in regard to the cauſes of the duration of aſthenic life, are the external relations in which we are placed. Theſe relations are both ſpiritual and phyſical; for example, impreſſions on the mind, the air, food, &c. Our life is not a production of external ſtimulants, but a ſelf-ſufficient, ſelf-ſubſiſtent chemical operation, ſubject, however, to the conditions and influence of theſe ſtimulants. By the mode and degree of action of theſe ſtimulants, the internal vital activity is changed and modified. When the ACTION OF THESE STIMULANTS, THEREFORE, IS NEITHER TOO GREAT OR VIOLENT, NOR TOO WEAK AND DEFICIENT FOR MAINTAINING LIFE, life itſelf may continue, even when the conſtitution is debilitated and expoſed to internal debilitating cauſes.

1. NOT TOO IMMODERATE. Thus the life of aſthmatic perſons is prolonged, when they inhale air leſs mixed with oxygen; while, on the other hand, in too pure air, the unnatural activity of the vital principle is increaſed, conſequently conſumption, and the term of life is ſhortened. Thus guarding againſt intemperance in eating, irritating food, and ſpirituous liquors, prolongs the life of feeble perſons. Avoiding every thing to which one has not been habituated, and the careful obſervance of certain diætetic rules,

in

in regard to feeble life, and particularly in old age, produce a like effect.

2. NOT TOO WEAK. The continuance and ſupport of life require a certain degree of external excitement, proportioned to the individual ſuſceptibility of irritation. Where this is wanting, the internal activity of the vital principle is not ſufficiently animated. Thus, too poor nouriſhment, watery food, and mere vegetable diet, maintain and promote feebleneſs; whereas, a ſtrengthening diet, where there is an aſthenic prediſpoſition, will prevent feebleneſs, and prolong life.

3. EXISTENCE OF THE NECESSARY STIMULANTS. Theſe ſtimulants may be indiſpenſably neceſſary of themſelves for the maintenance of life, or only through habit. When there is a deficiency in the reparation of what has been loſt, life muſt at length ceaſe; but when feeble life is aſſiſted by proper nouriſhment, it may be prolonged for a conſiderable time.

§ 287.

Life is ſubject to the influence of external ſtimulants. Some of theſe are able to maintain life longer than others; as, for example, a moderate degree of heat. Among the debilitating powers that ſhorten life, there is alſo a great difference; ſo that under the action of ſome of them, life may be continued longer than under that of others. Thus it ſupports itſelf longer under the influence of a conſiderable degree of cold than under that of great heat: the higheſt degree of cold has a different effect.

Sometimes there are certain ſtimulants from which life ſeems ſuſpended as by its laſt thread. Among theſe, in particular, are external heat, mental ſtimulants,

lants, animating means which rouſe the vital principle, wine, muſk, camphor, æther, &c.

§ 288.

Certain changes of the animal nature, general ſtates which give a different, changed direction to the activity of the bodily functions, have an important influence in regard to the prolongation of life. Among theſe are the periods of expanſion and pregnancy (§ 186). In theſe ſtates, diſeaſes with which the body was before attacked, are either ſuſpended, or aſſume a different progreſs. Sometimes this change is permanent, ſo that different chronic diſeaſes ceaſe; for example, after maturity; ſometimes it is only temporary, ſo that the diſeaſe is more ſuſpended during the period of expanſion. The latter caſe contributes alſo to the prolongation of life, as it at leaſt leſſens, for a certain time, the too violent irritation of the diſeaſe. During pregnancy, conſumption generally makes a ſtand, or its progreſs becomes much ſlower.

When with increaſing years the immoderate irritability (excitability) is leſſened, ſeveral diſeaſes aſſume a ſlower pace, and life is leſs ſpeedily conſumed. We have an inſtance of this in conſumption, which proves mortal much ſooner in the period of youth than in that of manhood.

Apparent death alſo belongs to this head; a ſtate in which irritability is greatly leſſened, and in which the action of external pernicious ſtimulants contributes leſs to the extinction of life. Hence the incredibly long duration of life in ſuch a ſtate; which may be explained beſides from the ſuppreſſed activity of aſſimilation

milation and reſorption. Hence people benumbed by cold can remain ſo long alive expoſed to the utmoſt degree of it.

§ 289.

Various diſeaſes of the chronic kind terminate their courſe ſooner, according as they excite or leſſen irritability. Many diſeaſes contribute to the prolongation of life, and for this reaſon, that, when added to the previous diſeaſed ſtate, they produce in it ſuch a change that the action on the irritability is leſs violent. To this head belong cachexies, out-breaking, and all the ſo-called metaſtatic diſeaſes. Local diſeaſes, into which general diſeaſes are converted, have, under certain circumſtances, the ſame effect. Hence there is ſome foundation for the opinion prevalent among the common people, that the hæmorrhoids, and the gout, contribute to the prolongation of life.

§ 290.

From theſe cauſes we may explain why life in the aſthenic ſtate can continue for a conſiderable time. Some debilitating cauſes are deſtroyed by oppoſite ſtrengthening cauſes, and the equilibrium is thus continually maintained.

§ 291.

Even HABIT (§ 143—146) ſerves to prolong life. Hence it is poſſible that the vital principle may exerciſe its action on the body for ſome time, even when the organization has, in a conſiderable degree, loſt its ſuſceptibility of it. For this reaſon the vital principle exerciſes its action in individual organs longer

longer than it otherwiſe would have done, and ſuſceptibility for the vital principle is in ſuch organs longer retained. Thus epileptic movements continue longer, and the falling ſickneſs returns, by mere habit, long after the exciting cauſes have been removed. We find, in general, the natural animal operations combined with our daily habits of life,

II.

ASTHENOCOMIC;

OR,

THE MEANS OF PRESERVING FEEBLE LIFE.

PRELIMINARY OBSERVATIONS.

§ 292.

We now come to the application of the principles laid down in the Firſt Part, or the means of maintaining feeble life. The art of the phyſician is employed not only in preſerving health, and guarding againſt diſeaſe, the conſequence of which is the prolongation of ſound and perfect life, but it exerts itſelf to maintain life under the moſt unfavourable circumſtances, amidſt feebleneſs and diſeaſe. It endeavours to remove the cauſes of feebleneſs; but if this cannot be accompliſhed, it endeavours, at any rate, to extend feeble life as far as poſſible; and, keeping in view the principles eſtabliſhed in the Firſt Part, to prolong the duration of our exiſtence.

§ 293.

The employment of this art, however, is oppoſed by many difficulties, as life is naturally ſurrounded by a mul-

a multitude of enemies. Even when we poſſeſs full vital ſtrength, and have the full enjoyment of health, the duration of life is very uncertain; but it muſt be much more ſo where it is feeble; when the enemy has already made an attack, or has gained conſiderable advantages over us. In the latter caſe, more helps are neceſſary to guard againſt the farther progreſs of ſuch a ſtate. When it is impoſſible to reſtore the loſt health, we muſt be ſatisfied with preventing the evil from acquiring a ſuperiority; and if this cannot be done, if the diſeaſe will admit of no cure, we muſt try to retard the progreſs of the malady as far as poſſible, and to maintain life, with all its debility, as long as nature will allow.

§ 294.

There are, therefore, two principal indications for maintaining feeble life:

1. TO GUARD AGAINST THE CONSUMPTION OF LIFE.

2. TO RETARD THE CONSUMPTION. Life is conſumed of itſelf as well as by the activity of the vital principle, and other external ſtimulants.

§ 295.

Life, even where there is the moſt excellent conſtitution of the organs, and the ſtrongeſt body, cannot exiſt for ever; and though it were poſſible to ſecure it in the moſt perfect manner from all external noxious influences it would ſtill decay, becauſe, by the activity of the organs, and the irritation thence produced, the organs would be conſumed, and gradually loſe all their ſuſceptibility for being acted upon by the vital princi-

ple. How great this internal conſumption of the organs is, may be gathered from the impulſe of the blood againſt the veſſels, and from the activity requiſite for maintaining the neceſſary functions of life, and which extends throughout all the organs; how many organs are put into activity by the buſineſs of reſpiration and digeſtion. The organs, by this internal excitement, muſt gradually experience changes in the coheſion and admixture of their component parts, which at laſt render them unfit for the duration of life.

Gutta cavat lapidem non vi ſed ſæpe cadendo.

In this manner life, even among moderate men, and if it ſhould continue a hundred years, muſt at laſt come to an end.

§ 296.

The duration of life, however, is prevented not only by this internal ſelf-conſumption, but alſo by the ACTION OF EXTERNAL STIMULANTS; yet theſe external ſtimulants are conditions of life, without which it could not exiſt. Theſe ſtimulants exerciſe an action both on the organization, and on the vital principle. On the one hand, whether they increaſe or leſſen the activity of the vital principle, the conſumption of the organic parts is effected by external ſtimulants; on the other, they excite the organic parts by their immediate action on the ſurface of the body, and promote conſumption. Thus the action of the air tends to conſume the body. Even though the reſtorative functions are in complete vigour, and what has been loſt by the progreſs of life be repaired, the activity of the vital-principle thereby excited is itſelf of a conſuming nature.

This

This decreaſe, therefore, advances progreſſively in complete manhood, but in an imperceptible manner.

§ 297.

This conſumption is much increaſed by diſeaſe, or by POSITIVE DEBILITATING STIMULANTS, either EXTERNAL or INTERNAL, and the duration of life is conſequently ſhortened. The organs ſuffer in their conſiſtence, loſe their ſuſceptibility for internal and external excitement from the vital principle, and for the action of the ſurrounding elements, and become always more and more unfit for animation. In vain is all influx of reparation from without, as the organic capability of receiving it ſtill decreaſes, and is inſufficient for the maintaining of life. Hence there at length ariſes a TOTAL LOSS IN THE ORGANS OF SUSCEPTIBILITY FOR THE VITAL PRINCIPLE, that is DEATH.

§ 298.

The ſtate of life is more or leſs perfect, and inclines either to health or diſeaſe. Theſe different gradations are determined:

1. BY THE EXISTING SUM OF THE VITAL PRINCIPLE. It has been proved that the ſtock of the vital principle is leſſened in a conſiderable degree by diſeaſes, particularly ſuch as irreparably deſtroy the organic parts, and by old age. By ſum of the vital principle we underſtand the greater or leſs quantity of it exiſting in the body. Now if a ſmaller quantity of the vital principle is preſent in the organs than is neceſſary to put them in full activity, and to exerciſe the functions in that degree requiſite for maintaining a per-

a perfect ſtate of life, there ariſes an aſthenic ſtate, that is feeble life. This may be illuſtrated by the ſtate of the conſtitution at a great age. Life, in that ſtate which we call DIRECT VITAL FEEBLENESS*, cannot long continue; the ſcanty ſtock of vital principle is not ſufficient to produce and maintain, in a permanent ſtate, the activity requiſite for the neceſſary vital functions. On account of this too feeble operation, and the too little excitement of the organs deſtined for the functions, there enſue unnatural changes in the interior part of the organization; deviations from the natural admixture of the organic fundamental component parts; obſtructions, congeſtions, &c. and the conſequence is unfitneſs of the organiſm for life.

2. BY THE MORE OR LESS PERFECT ACTIVITY OF THE VITAL PRINCIPLE.

The ſame diſtinction muſt be made between the vital principle and its activity, as between cauſe and effect. The vital principle is inceſſantly active, for without activity and motion no life can take place. The idea of a ſlumbering vital principle is chimerical. Man is the moſt perfect *perpetuum mobile*. But this activity, this manifeſtation of the vital principle may exiſt in VERY DIFFERENT DEGREES.

There is a great difference between the moſt perfect health and apparent death, or the extreme degree of feebleneſs in malignant nervous fevers. But, even in this laſt ſtate, the vital principle is always buſy and active, only its manifeſtations eſcape our perception;

* Is different from that which ſome, with BROWN, call, improperly, DIRECT DEBILITY, where reſtoration of the leſſened or exhauſted excitability is poſſible; conſequently there is no actual loſs in the ſum of the vital principle.

death appears to us to have commenced where life is ſtill actually preſent.

§ 299.

The activity of the vital principle is greater:

(a) THE GREATER THE SUM OF THE VITAL PRINCIPLE PRESENT. The manifeſtations of the vital principle, however, may be pretty lively where there is actual direct vital feebleneſs (a deficiency of the vital principle) and ſhew itſelf pretty ſtrongly in individual organs; but this is the ſtate of diſeaſe or of unnaturally exalted irritability, in which the vital principle is ſometimes immoderately active; and hence conſumption, where the ſtock of life is weak, is much greater.

(b) THE MORE PERFECT THE ORGANISM OF THE BODY. This perfection depends on the regular ſtructure of the organs; on the natural proportion of their component parts, by which they become fit for being acted upon by the vital principle. There are many variations from this natural proportion, which are either ORIGINAL, exiſting already in the ſtructure of the organs; or they are variations excited by the ACTION OF CERTAIN AGENTS ON THE ORGANIZATION. The animated organiſm is inceſſantly expoſed to changes; the buſineſs of abſorption, reſorption, aſſimilation, nutrition, &c. is continually carried on in a greater or leſs degree, as long as life continues. But according as ſtimulants exerciſe a ſtronger or weaker action on the organiſm, the activity of theſe functions, that is, the activity of the vital principle, will be modified; conſequently, the activity of the vital principle depends on the ſtate of the organiſm. If the

ſtate

ſtate of the organiſm be different from the ſtate of perfect health, the activity of the vital principle will be impeded. This we call INDIRECT FEEBLENESS.

(c) ACCORDING AS THE ACTION OF STIMULANTS ON THE ORGANIZATION IS MODERATED. If the ſtimulants exerciſe too violent an action, the activity of the vital principle will be increaſed beyond the natural ſtate; if their action be too weak, it will be depreſſed below that ſtate. Thus aſthmatic people are excited too violently by too pure air, and thus the activity of the vital principle is leſſened in the external organs by froſt.

Theſe external ſtimulants are CONDITIONS OF LIFE. Life is feeble, unleſs theſe are preſent in a certain degree, or where any of them are wanting.

§ 300.

From theſe obſervations we can form an idea of feeble life. It conſiſts,

1. In IMPERFECT ACTIVITY of the vital principle.

The vital principle is either immoderately active or too inactive.

2. In LESION OF THE ORGANIZATION, by which the organization is rendered leſs fit both for being acted on by the vital principle, and for the external action of external powers; the action of theſe powers is either not felt, or felt in a very ſmall degree; and the organization is affected by it in an unnatural manner: ſo much depends on the ſtructure and internal conſtruction of a machine to render it fit to diſcharge the functions for which it is deſtined.

§ 301.

The moſt immediate cauſe, the foundation of all life, is the vital principle: the conditions of life and the remote cauſes are EXTERNAL STIMULANTS.

§ 302.

External ſtimulants, partly by their deficiency, partly by their ſuperfluity and too great accumulation, and conſequently by too weak or too ſtrong excitement, produce an unnatural ſtate of life, which we call FEEBLENESS (aſthenia.) In the firſt caſe, when there is a want of the neceſſary ſtimulants, it is, according to Brown, DIRECT FEEBLENESS (debility); in the ſecond, where there is an immoderate degree of excitement, it is INDIRECT DEBILITY.

§ 303.

On theſe grounds the METHOD OF MAINTAINING FEEBLE LIFE DEPENDS. We muſt endeavour to remove the remote cauſes, thoſe impediments which prevent full regular activity of the vital principle and the concomitant good ſtate of the organization; but if this cannot be accompliſhed, we muſt, at any rate, endeavour to employ our imperfect knowledge of the operations of the vital principle and of the organization to remove theſe impediments, at leaſt in part, and to prevent, for a certain period, the too rapid conſumption of life.

§ 304.

The chief point in the art of curing diſeaſe, or an unnatural ſtate in the interior part of the organization,

the grounds of which lie in an irregular action of the vital principle, conſiſts in the REGIMEN OF EXTERNAL THINGS; that is, of all thoſe things which exerciſe an action on man, and to which we are conducted by a knowledge of man, and by obſervations and experience, which enable us to calculate the changes that may be produced in the interior part of the organization by the excited action of external means.

§ 305.

For this purpoſe a knowledge of the organization in general, as well as of its preſent ſtate, is required.

The mode of treating the organic ſtate is modified by our intimate knowledge of its conſtitution. In this buſineſs we are guided by obſervation of the external phenomena, the manifeſtations of the organic powers.

§ 306.

From this we may deduce the mode of treating the aſthenic ſtate of life.

The art of maintaining feeble life conſiſts,

1. IN EFFECTING AND MAINTAINING A CERTAIN MEAN STATE OF THE ACTIVITY OF THE VITAL PRINCIPLE, EQUALLY REMOTE FROM IMMODERATE AS FROM DEFICIENT ACTIVITY.

2. IN REMOVING INJURIES OF THE ORGANIZATION AND RESTORING IT TO ITS SOUND STATE.

Both theſe circumſtances are inſeparably connected. We perform the one when we accompliſh properly the other; for every thing that exerciſes an action on the organization does ſo alſo on the vital prin-

ciple, and *vice versa*; for without vital principle no organization can exist: organization is the vehicle of the vital principle. If we are not always able to attain to the second indication, we must, however, exert ourselves to CHECK, OR AT LEAST CONFINE, THE FURTHER PROGRESS OF ORGANIC DESTRUCTION.

CHAPTER I.

GENERAL METHOD OF MAINTAINING FEEBLE LIFE.

§ 307.

THE means of maintaining life in the aſthenic ſtate, are founded on our knowledge of the vital principle, and the organization. The difficulties which occur in the application of theory to practice, are numerous. It is impoſſible to form into a complete regular ſyſtem our ideas reſpecting the vital principle, and organization, and the powers of the means known to us for maintaining feeble life. The knowledge of human nature is too imperfect and deficient; the powers which exerciſe an action on it externally and internally, are ſo different, and their manner of action is ſo modified, that until we obtain a better knowledge of them, than we at preſent poſſeſs, they muſt often deceive our obſervation, and elude our reſearch. There is leſs abſolute certainty, in regard to the theoretic principles on which we found our art of healing, than we perhaps imagine. No one will have the preſumptuous vanity to conſider his ſyſtem as the only one founded on truth, and to expect that it ſhould be blindly adopted, when it is merely agreeable to nature, has probability in its favour, and can be confirmed only by a judicious practical application. But even if ſuch a ſyſtem be not altogether eſtabliſhed on ſure grounds, it may however be of uſe to the practitioner; the conſequences deduced from it

may ſtill be attended with ſome advantage *. The phyſician who is guided in his practice by principles, always proceeds with more certainty. There were excellent practitioners, even at a period when theory was far more defective than at preſent; and yet theſe eminent men formed the rules of their healing art from that imperfect theory: they ſupplied the deficiency by their acuteneſs and ſpirit of obſervation, and in this manner Pindar and Homer ſung long before any thing had been written on the art of poetry. It cannot, however, be denied, that our preſent improved theory, particularly the deeper ſtudy of human nature, the doctrine of the vital power, or vital principle, affords great advantages in regard to the practical art, and gives it more certainty and perfection. But there are ſo many deficiencies, ſo many difficulties in explaining the connection of the phenomena, that we can give only a very few general rules on which it is poſſible to found a ſcientific method for maintaining feeble life. With our preſent knowledge of human nature, all that we are able to effect is, to deduce from certain individual obſervations, rules for our mode of practice. However deficient theſe obſervations may be, and however much the principles we have diſcovered, may be liable to exceptions, yet they may afford hints for general practical preſcriptions. It belongs then to the phyſician, to apply them to individual caſes; to compare accurately with each other, indications and counter-

* This obſervation, and that we are only collecting materials towards a more perfect ſyſtem for poſterity, ought to render us more tolerant in regard to thoſe who entertain ſentiments different from our own.

counter-indications, and to diſcover the deviations which ought to be made from them. He muſt never loſe ſight of theſe general principles, and his practice muſt be founded on a knowledge of nature. According as he deviates more or leſs from theſe principles, without abandoning them entirely, he becomes an empiric, in the good ſenſe of the word. The irrational empiric pays no attention to nature; follows unconditionally his own ideas, or implicitly adopts thoſe of others.

§ 308.

Obſervation, however, of the phenomena of life, gives us many practical reſults, on which we eſtabliſh grounds for prolonging life in the aſthenic ſtate, when it is not altogether poſſible to remove the aſthenia itſelf completely. But we obtain our end, in the moſt perfect manner, when we keep in view the two principal objects, the vital principle, and the organization. If we attend only to the vital principle, we ſhall often apply means that weaken and deſtroy the organization. However properly we may be conducted by this view, when we are able to adapt the ſtimulants to the ſtate of the vital principle, it may ſtill eaſily lead us aſtray; we might thus totally forget the body, and confounding the vital principle with the ſoul, become partial. Our object is man, as an animated body, endowed with a ſoul. This is the point of union for all real phyſiologiſts; the principal law of pathogeny to which all their ſyſtems more or leſs approach, whether they make the grounds of their theory to be the vital principle, or the organization. It is, however, neither the vital principle nor

nor organization alone, but only ANIMATED ORGANIZATION that can afford a ſure baſis for the art of prolonging human life.

1. THE VITAL PRINCIPLE.

§ 309.

1. The vital principle is either TOO ACTIVE, and therefore occaſions a ſpeedier conſumption of itſelf, as well as of the whole organization; or it is TOO INACTIVE, that is leſs active than is required for maintaining a ſound ſtate of life. Immoderate activity, in the aſthenic ſtate, will tend more to ſhorten life, becauſe there is either a ſmaller ſtock of the vital principle, or the organization is weakened; that is, has loſt both in regard to ſuſceptibility for the vital principle, and to ſuſceptibility of irritation, from external ſtimulants. In the firſt caſe, there is a want of the neceſſary efficacy of the vital principle in the organs. A diſtinction muſt here be made between efficacy and activity. Sufficient efficacy is the proportional degree of vital activity requiſite for preſerving the equilibrium of health. In the ſecond, there is a deficiency in the reparation from without, of that which has been loſt, as the weakened organization is not fit for receiving it in that degree neceſſary for maintaining feeble life.

Too great, immoderate vital activity, or, according to BROWN, ſthenia by excitement, is obſerved in pyrexiæ, or inflammatory fevers. But even in the aſthenic ſtate, where there is feeble life, too great activity of the vital principle may exiſt, though only for a certain period. (§ 102).

§ 310.

§ 310.

But the vital principle is ſometimes TOO INACTIVE. This is likewiſe a cauſe of feebleneſs. Hence too little reaction againſt the action of pernicious powers; too little oppoſition to the ſtrength of diſeaſe.

The cauſes of this deficient activity lie either in an actual deficiency of the vital principle, as in great old age; or in impediments which ſuppreſs the activity of the vital principle, as in many kinds of apparent death, and in nervous fevers.

§ 311.

Too much as well as too little vital activity forms both a GENERAL and a SPECIAL ſtate, in which certain organs excluſively ſuffer.

§ 312.

From theſe obſervations we may deduce the following indications:

1. THE IMMODERATE ACTIVITY OF THE VITAL PRINCIPLE MUST BE LESSENED AND MODERATED.

2. THE TOO WEAK ACTIVITY OF THE VITAL PRINCIPLE MUST BE STRENGTHENED.

§ 313.

A. LESSENING THE IMMODERATE ACTIVITY OF THE VITAL PRINCIPLE.

In the application of the means, great caution is required to determine the degree to which the activity of the vital principle muſt be lowered, not to do injury by a contrary extreme.

This is of importance in regard to the time of continuing the irritation-leſſening method.

§ 314.

§ 314.

It is of importance to determine in this case, whether with the greatest activity of the vital principle there is an actual DEFICIENCY OF THAT PRINCIPLE, or whether there is a SUFFICIENT DEGREE OF VITAL STRENGTH (§ 103); for we find in the utmost real debility a great liveliness of action in the organization in general, as well as in individual organs. This is the case with those who are dying. A little before his death, Muley Moluch caused himself to be carried round through his troops in an open litter, exhorted them to fight with courage and bravery in defence of their religion and country, and when he found them ready to give way, he sprung from the litter, though in the last agony, rallied his army, led them on to a new attack, and a few moments after expired.*

The case is different where there is still sufficient vital strength, but not enough for the degree of the asthenic state. This we observe in BROWN's indirect debility, which arises from immoderate excitement. It is a state where the manifestations of the vital principle are oppressed; where the power of being acted upon by stimulants is in a considerable degree destroyed.

§ 315.

The mode of treatment for these two different states of

* Great attention ought to be paid to this difference in a practical point of view. The feeblest persons, by excessive excitement, may be impelled to perform operations which belong to strength. In such persons, though an actual deficiency of the vital principle exists, yet that principle may be exceedingly active.

of leſſened activity of the vital principle is totally different.

In the firſt caſe, great caution is neceſſary that the ſmall ſtock of the vital principle may not be entirely exhauſted. The chief object of attention muſt be to guard againſt the progreſs of exhauſtion, or at leaſt to leſſen it. The quantity of the ſtimulants muſt be accurately adjuſted; and they muſt be employed only in that degree which is neceſſary to maintain the activity of the vital principle, as there is great reaſon to apprehend that when the uſual activity ceaſes, or decreaſes ſuddenly in a conſiderable degree, the irritability, which continues a certain period by continuing the excitement, may be totally exhauſted. (§ 377.)

§ 316.

Great caution alſo is required in this ſtate to withdraw, in a certain degree, the external ſtimulants which maintain the too great activity of the vital principle. This is done:

1. By removing or leſſening the external ſtimulants.

2. By changing them.

Care muſt be taken not to remove theſe ſtimulants abruptly, that life may not be at once extinguiſhed by this ſudden change. This would be the caſe if feeble patients, in whom the activity of the vital principle is immoderately exalted by heat, ſhould be ſuddenly expoſed to cold.

External ſtimulants muſt be leſſened or changed with the utmoſt caution; for example, when ſtimulating food is exchanged for food which is leſs ſo.

In the laſt place, changing and varying the ſtimulants

ſtimulants may be attended with great advantage, if the irritability hitherto excited in too ſtrong a degree be leſſened; when, in particular, thoſe ſtimulants applied in the place of others, to which people have been before expoſed, exerciſe a leſs violent action.

§ 317.

The ſecond caſe of aſthenia, when the vital principle is not deficient in ſo great a degree, requires another treatment, and we may proceed in it with leſs timidity. With proper caution we may employ debilitating means, if they are not too long continued.

§ 318.

TREATMENT OF IMMODERATE ACTIVITY OF THE VITAL PRINCIPLE.

We muſt make a diſtinction between the ſtate of immoderate vital activity IN GENERAL, and that in INDIVIDUAL ORGANS. Sometimes the vital principle is immoderately active in individual organs, by which the whole conſtitution of the body ſuffers, and the neceſſary life is withdrawn from other organs; for example, too great activity of the organs of thought.

§ 319.

The indications here, with regard to DIRECT or INDIRECT feebleneſs, are:

1. TO LESSEN THE TOO GREAT VITAL ACTIVITY OR IRRITABILITY IN THE SUFFERING ORGANS. This is done:

(a) BY DEBILITATING MEANS cautiouſly employed, provided the vital principle exiſts in a ſufficient degree. To this head belongs the merely leaving

ing off the ſtimulating regimen hitherto followed; but, in general, this mode of cure will be employed with more certainty in local affections.

(b) By NARCOTICS. Narcotics are ſtimulants, when of ſuch a ſtrength, or employed in ſuch a degree, as is ſufficient to deſtroy irritability for a certain period. This effect is produced by wine, opium, and narcotic poiſons.

2. To EXALT THE LESSENED VITAL ACTIVITY AND IRRITABILITY IN OTHER ORGANS, PARTICULARLY IN THOSE WHICH HAVE A CONSENSUS WITH THE SUFFERING ORGAN. This is done by ſtimulating medicines locally applied.

3. To PRODUCE GENERAL CHANGES IN THE BODILY CONSTITUTION. In regard to direct or indirect feebleneſs, this object will be accompliſhed:

(a) By WEAKENING REMEDIES, in order to effect a more general and uniform diſtribution of the vital principle; for example, emetics, purgatives, bleeding.

By STRENGTHENING REMEDIES, of which we muſt chuſe thoſe which do not, at the ſame time, ſtimulate.

Narcotics alſo may here be employed as corroborants, ſince they tend to leſſen and check the immoderate vital activity; but care muſt be taken to leſſen their noxious effect, by which the vital principle itſelf would be exhauſted. It is true that theſe medicines leave behind them a certain relaxation and debility; but in caſes where there is not a great deficiency of the vital principle itſelf, this is only INDIRECT DEBILITY, which is merely tranſitory, ſo that the equilibrium, deſtroyed by the irregular activity of the vital

vital principle, is again reſtored. But a great deal depends on THE DEGREE in which theſe narcotic means are employed. In a ſmall inſufficient degree, inſtead of leſſening, they will rather exalt the immoderate irritability and haſten vital conſumption; but in a ſtronger degree, they are able to lower the immoderate irritability at once; and to excite, as it were, a temporary degree of apparent death, which, with a ſtronger doſe, will exiſt in a ſtill higher degree, and by imprudent application may paſs into actual death.

§ 320.

It is not always the caſe that the immoderate vital activity can be lowered at once; and the ſureſt way is to endeavour to reſtore the equilibrium gradually. The method to be employed is as follows:

1. WEAKER STIMULANTS THAN THOSE WHICH EXCITED THE PREVIOUS IRRITABILITY MUST BE EMPLOYED. Theſe ſtimulants muſt be leſſened only gradually. Thus brandy drinkers can be beſt weaned from their pernicious habit by gradually leſſening their daily quantity.

2. THE FORMER STIMULANTS MUST BE CHANGED. Care, however, muſt be here taken, that while irritability is leſſened the powers of action may not ſuffer*; of the means, therefore, employed for leſſening irritability, thoſe deſerve the preference which debilitate as little as poſſible.

§ 321.

In order that the power of action may not be too much depreſſed it will be neceſſary:

* An explanation of the terms irritability, ſuſceptibility, of irritation, and power of action may be found, § 78, 79, 82.

1. To

1. TO GUARD AGAINST DEBILITATING POWERS. Every thing that debilitates muſt be as much as poſſible removed: the patient muſt be allowed to uſe, if not a direct ſtrengthening ſtimulating diet, at leaſt ſuch food as may contain ſufficient ſtrength; there muſt, therefore, be no decreaſe in the neceſſary nouriſhment; no ſtarving cure; no weak watery food.

2. STRENGTHENING MEANS MUST BE EMPLOYED IN A MODERATE DEGREE. Such ſtrengthening means muſt be choſen as do not, at the ſame time, ſtimulate, or ſtimulate in a high degree. Thus ſpices and ſpirituous liquors are far more ſtimulating than animal food. Regard, however, muſt be had to habit and mode of life. Thus certain ſtrengthening, ſtimulating things, produce none of theſe effects in perſons, whoſe ſuſceptibility of irritation is blunted. Hypochondriacs, enervated in a high degree, cannot bear cinchona and quaſſia; exceedingly feeble patients, in general, cannot endure cinchona in powder.

§ 322.

We muſt endeavour to aſſiſt the artificial, excited debility by means of corroborants; and, at any rate, to prevent the injury which might be occaſioned by the before-mentioned debilitating powers. Thus, where the conſtitution is debilitated, gentle diſſolvents may be given with an addition of cinchona. The judicious phyſician, however, will not ſometimes employ the debilitating and ſometimes the ſtrengthening method, as if he wiſhed to make up for all the faults that may have been committed. The object here is merely to leſſen the immoderate irritability. This is done indeed by medicines, which, at the

ſame time, attack the power of action; and therefore care muſt be taken that no direct debility ariſe, but that nature be always ſupported. The kind of medicines to be employed for accompliſhing this end may be determined from the preceding principles.

§ 323.

As a knowledge of the conſtitution, and of concomitant circumſtances, is the ſureſt guide in applying the means of cure in the preſent caſe of aſthenia, ariſing from immoderate activity of the vital principle, ſuch debilitaring means as are beſt calculated to leſſen the exceſs of irritability are to be PERIODICALLY employed. But this is the caſe in regard to indirect debility, where there is no deficiency of the vital principle.

This method alſo muſt NOT BE CONTINUED TOO LONG, that the power of action may not be too much weakened.

This method will be employed with moſt advantage in LOCAL AFFECTIONS, and when TOPICALLY applied, provided individual organs ſuffer from exceſs of irritability. In the firſt caſe, a conſiderable influence on the diſeaſed ſtate, in general, may be expected, on account of the conſenſus. Leſſening the irritability in individual organs, will ſerve to leſſen the immoderate irritability of the body. Debilitating means muſt, in particular, be employed when this is the caſe with individual organs; with this view, local bleeding is employed; for example, by leeches and cupping; alſo injections in diſeaſes of the bowels.

§ 324.

This local application of debilitating means, or, in order

order that I may avoid being accused of contradiction, of the means for lessening irritability, is safer when their action is PARTICULARLY CONFINED TO INDIVIDUAL ORGANS, so that no increase of the general feebleness may be produced, while the immoderate irritability is lessened. To guard against these prejudicial consequences, it will be necessary to make the application of the means as local as possible. Thus bleeding may be rendered topical by previously binding up the suffering part. The effect in removing a local complaint will be so much the greater. This will be the case in regard to local cramp in the arms, &c.

In consequence of this observation, cold is applied locally in cases of mania.

§ 325.

Those means which lessen the too great irritability, without weakening the power of action, will be the most proper for producing the desired effect. The excessive activity of the vital principle, with the noxious influence of which we are well acquainted, will be lessened without the vital principle itself sustaining any loss. There are no means more powerful to accomplish this end than REST.

§ 326.

These means employed topically serve also to lessen the immoderate irritability of individual organs. Thus lessening the activity of the organ of thought, has a beneficial influence in lowering immoderate activity in general.

§ 327.

This local application relates to the ſuffering organs more immediately; for example, when by too great activity of the mind, and the immoderate irritabiliry in the organ of thought thence ariſing, the irritability of the body is unnaturally exalted; and alſo to individual organs, in general, in order that by leſſening the irritability in theſe organs, a general effect may be produced by means of the conſenſus; for example, the local application of bleeding, bathing the feet, &c. In this manner detergents have an effect more immediately, indeed, on the bowels, but by means of the conſenſus on the whole frame.

§ 328.

In applying means for leſſening the immoderate activity of the vital principle, it ought to be a chief precautionary rule to guard as much as poſſible both againſt conſumption of the vital principle itſelf, and the pernicious effects that may be produced on the conſtitution. The loſs of the powers may be repaired by reſtorative diet, and time for reparation may be obtained by reſt. Care muſt be taken to maintain the organization in its proper relation to the vital principle, and to external ſtimulants. If there be direct feebleneſs, an actual deficiency of vital principle, the ſedative means of reſt and ſleep are required; but not to prove hurtful they muſt be employed only in a certain degree; alſo ſtrengthening means which do not ſtimulate. In indirect feebleneſs, however, the ſtrengthening means muſt be combined with gentle ſtimulants.

B. STRENGTH-

B. STRENGTHENING THE TOO WEAK ACTIVITY OF THE VITAL PRINCIPLE.

We ſhall here conſider that ſtate where the activity of the vital principle is impeded, or inſufficient for maintaining life.

§ 329.

The vital principle is never ENTIRELY INACTIVE. This would be altogether contrary to every idea of life (§ 298). Neither can its activity, in the proper ſenſe of the word, be ſuppreſſed or totally deſtroyed, which would be the ſame thing as ſuppreſſing life; but the free manifeſtation of this activity may be more or leſs impeded, which HUFELAND* calls a confined ſtate of the vital power.

§ 330.

Here we have a ſtate in which the vital principle is far leſs active, in various degrees, than in the ſound ſtate, that is, feeble life; or its activity is irregular, immoderate, or too weak. This vital activity, however, is never totally impeded, but ſometimes in ſo great a degree that it is very difficult for our obſervation to diſtinguiſh ſuch a ſtate from actual death, eſpecially as this extreme degree of feeble vital activity takes place in the principal organs, when, according to all the hitherto known methods of examination, we obſerve no pulſe in the heart or the arteries; no reſpiration; no re-action to the impreſſion of ſtimulants; and yet a certain degree of vital activity exiſts, and conſequently of re-action.

* Pathogeny.

This feeble ſtate of vital activity we find, in a far leſs degree, in caſes of fainting and real nervous fevers.

§ 331.

The ſtate of impeded activity of the vital principle is a far more evident proof of DIRECT FEEBLENESS, than that of immoderate vital activity. We find it in caſes of actual leſion, particularly in mechanical injuries of organic parts.

§ 332.

The grounds of impeded, inſufficient activity of the vital principle, lie either in a deficiency of this principle itſelf, or merely in impediments; external and internal cauſes which oppoſe its free action.

1. DEFICIENCY OF THE VITAL PRINCIPLE produces direct vital feebleneſs. This deficiency becomes, at length, ſo great, that very little re-action can follow; as in extreme old age, or in perſons who are dying.

2. IMPEDED ACTIVITY OF THE VITAL PRINCIPLE by external or internal cauſes.

a) INTERNAL CAUSES lie in the interior of the organization. They are ſtimulants which exiſt in the body: as the motion of the blood, corruption of the juices.

b) EXTERNAL CAUSES are external ſtimulants, which exerciſe an action on the body from without.

§ 333.

All theſe cauſes depend on the ſtate of the organization, and the changes which take place in the interior of the organization. The conſequence of theſe

changes

changes is this impeded activity of the vital principle. From this we may deduce the following indication:

TO REMOVE THE IMPEDED AND INSUFFICIENT ACTIVITY OF THE VITAL PRINCIPLE.

§ 334.

To attain to this end, we muſt accompliſh the following points:

1. Remove the impediments which confine the vital activity.

2. Employ means to excite the vital activity itſelf.

§ 335.

Both theſe points muſt be intimately combined with each other. This double object we are not always able to accompliſh; and we muſt be contented with attaining to the firſt only in part. Often we have no other reſource than the application of means for exciting a ſtronger vital activity. But while theſe means, or rather the ſtimulants employed, have an action which tends to increaſe vital activity, they contribute, by their action alſo, to remove the impediments.

§ 336.

To accompliſh the firſt point, an accurate knowledge of the remote cauſes of the feebleneſs will be neceſſary; alſo an intimate acquaintance with the exiſting caſe, with the patient, the ſtate of his body and mind, their relations, and other circumſtances. By removing the impediments, the whole object of the cure will be attained. But ſometimes theſe impediments are inſuperable, either through ſome defect in the patient, or certain concomitant circumſtances.

§ 337.

A proper application of ſtimulating and ſtrengthening means, which will be more accurately defined in the following chapter, may ſerve for accompliſhing the ſecond point.

§ 338.

It is of importance, in that aſthenia which ariſes from impeded or inſufficient activity of the vital principle, to diſtinguiſh the DIRECT from the INDIRECT ſtate.

§ 339.

In the firſt caſe, the activity is ſo confined, that the direct application of ſtimulating and ſtrengthening means is neceſſary to render it again free, as in nervous fevers: this is the higher degree of aſthenia, in which not only irritability, but alſo the power of action is weakened. (§ 262. § 360.)

§ 340.

In the other caſe, the grounds of feeble vital activity lie more in OBJECTIVE IMPEDIMENTS, which may be the caſe where there is complete vital ſtrength. It is indirect feebleneſs, from an exceſs of excitement. To this head belong all thoſe diſeaſes which BROWN deduces from indirect debility. In this caſe, the object of cure muſt be to remove the impediments.

§ 341.

With proper caution and obſervation of the exiſting caſe, the ſo called debilitating means may, therefore,

fore, be employed; but the phyſician muſt always keep in mind, that he is treating an aſthenic ſtate, and conſequently that the ſtrengthening and ſtimulating method, properly ſo called, muſt be aptly combined with theſe ſo called debilitating means. There is here no contradiction, as might appear; and I purpoſely employ the term SO CALLED debilitating means, becauſe, though theſe means, under other circumſtances, debilitate, they act here as real corroborants. We may here call to mind the uſe of bleeding and emetics in diſeaſes of indirect debility *.

§ 342.

Locally employed, ſuch ſo called debilitating means may be of uſe, eſpecially when impeded vital activity relates only to individual organs; that is, when ſuch organs ſuffer moſt. Hence the good effect of emetics in ſuch a ſtate of the ſtomach.

The local application of theſe ſo called debilitating means, confined merely to individual parts of the body, may be more readily uſed in certain caſes, as the whole ſyſtem will thereby ſuffer leſs (§ 323.)

§ 343.

It muſt never be forgotten, that in the application of

* Facts muſt here decide. The puerperal fever, whether gaſtric or putrid, &c. for this ſyſtem makes no diſtinction, is certainly, according to Brown, one of the firſt aſthenic diſeaſes. We are informed that Doulcet ſaved from almoſt certain death, more than two hundred women who had been brought to bed in the Hotel Dieu, by means of ipecacuanha, and ſome detergents, and as a proof that the patients were ſaved by theſe means, it is added, that five or ſix women who would not take ipecacuanha died, *Frank. Med. Wochenblatt*, 1792. Vogel's Handb. II. 278.

of these means, they must NOT BE CONTINUED TOO LONG, lest actual feebleness should be excited; also that the dose, the degree in which they are applied, must be accurately proportioned to the state of the vital principle and of the organization. The use of them must be omitted, as soon as the impediments to complete vital activity have been removed. The use of these means, in the before mentioned cases, is necessary, and cannot be supplied by the exclusive employment of the stimulating strengthening method.

II. ORGANIZATION.

§ 344.

We must direct our attention not only to the vital principle, but also to the organization.

It has been already proved, that the method of cure will be only partial, if we do not take into consideration, at the same time, the vital principle and the organization.

By organization we understand, the finer structure of a body of a certain kind, by which it is fitted for being acted upon by the vital principle. (§ 76.) Thus there is an organization of plants, and another of animals.

Organization is a necessary condition of life; consequently the manifestation of the vital principle, the manner in which it acts in a body, depends on the nature of the organization, its structure, and the relation of its parts; and this holds good both, in general and in regard to the organization of whole genera, as to the individual organization of a single body.

§ 345.

§ 345.

The ſtructure, conſtitution, and nature of individual organs, determine the particular manifeſtations of the vital principle in them, by which ſuch an organ is rendered fit for its peculiar functions. It is owing to the particular ſtructure of the eye, that it is capable of ſeeing; and to that of the ſtomach, that it is capable of digeſting. This particular deſtination of individual organs remains the ſame in diſeaſe, only that the activity of the vital principle in them is more or leſs impeded.

§ 346.

We thence ſee what great influence our body has upon us, or rather that, conſidered as an organized being, it forms a part of us. The ſtructure, and even external form, the conſiſtence of the ſolids, the admixture of the fluids, the maſs of the body, and the proportion of the fundamental component parts among themſelves, are not the ſame in regard to the manifeſtations of the vital principle.

We muſt conſider this organiſm as animated. Wherever there is life, there is motion and activity. The organic parts are conſequently in a continual ſtate of motion and activity, increaſe and decreaſe, expanſion and contraction of the fibres, inceſſant excitement, and ever active counter-action, continual variation and change.

§ 347.

Of great importance, therefore, are the nature and ſtate of the organic parts; the tenſion or relaxation

of

of the veſſels; ſolid or too tender coheſion of the component parts of the fluids; the free or impeded activity of the organs; the mode in which the animal functions are carried on; the ſecretions, excretions, nouriſhment, digeſtion, &c.

According to theſe circumſtances, the organization is more or leſs fit both for external ſtimulants, and for the action of the vital principle.

§ 348.

There is a STHENIC and ASTHENIC ſtate of the organization.

§ 349.

In the ſthenic ſtate, we find a good conſtitution of the ſtructure and admixture of organic parts; and, therefore, the greateſt ſuſceptibility for life, and unimpeded fitneſs for the action of internal and external ſtimulants.

§ 350.

In the aſthenic ſtate the organization, that is, the organic parts, are injured.

1. MECHANICALLY by external force, leſion.

The reſtoration of deſtroyed and loſt parts, the healing of ſevere wounds, which is effected by the ſo called power of reproduction, or the healing power of nature, properly the vital principle, exhibit to us, in a very clear light, the difference between animate and inanimate, organized and unorganized bodies. This ſalutiferous effect either does not take place, or takes place in a very weak degree, when the activity of the vital principle is impeded; as in diſeaſes of the utmoſt debility.

2. CHEMI-

2. CHEMICALLY, changes in the admixture and proportion of the organic component parts. This effect is obſerved in internal diſorders. We have an inſtance of it in real putrid fevers, where actual colliquation, a diſpoſition to decompoſition, exiſts.

§ 351.

The conſequence of this leſion of organic parts is a loſs of ſuſceptibility for the vital principle, or at leaſt an irregular action of this principle in the organization. Hence its activity is ſometimes too violent, and ſometimes too weak.

When the organization is injured, its ſuſceptibility for external and internal ſtimulants is alſo charged; ſo that their impreſſions are received and re-acted upon in a manner totally different from what they are in the natural ſtate. Hence there is ſometimes immoderate, and ſometimes too weak irritability and reaction.

§ 352.

In treating the aſthenic ſtate, we muſt endeavour, therefore, to remove theſe deviations. There are, however, no means by which we can exerciſe an excluſive action on the bodily maſs, when we have to do with an animated body; but we endeavour to heal its wounds. Mechanical injuries belong to the external healing art (ſurgery); the internal or chemical, if we may employ that term, are the object of medicine, properly ſo called.

§ 353.

When the faculty of being affected by ſtimulants is not

not loſt in a very great degree, we may ſtrengthen the relaxed fibres, ſoften the rigid, revove bodies, which produce a noxious effect by mechanical preſſure; and, in particular, by a proper regimen in regard to thoſe external things which are in more immediate contact with the body, may at any rate remove thoſe cauſes which injure the organization. The conſequence of this mode of treatment will be freer vital activity. To this head belong precautions in regard to the air, heat, the external covering of the body, nouriſhment, reſt, motion, &c.

§ 354.

Our care relates not only to the organization and body in general, but alſo to the PRINCIPAL ORGANS, which are neceſſary for maintaining life. By cleanlineſs, waſhing, and bathing, we promote a good ſtate of the organ of the ſkin; by breathing pure air, we preſerve our lungs; by proper rules in regard to nouriſhment, we take care of the ſtomach; and by moderate activity of the ſoul, we provide agreeable mental ſtimulants to the organ of the ſoul. We muſt not, however, entertain any idea of ſpecifics or medicines that ſhall exerciſe an excluſive action on an individual organ. We produce the effect by acting upon the whole organization at the ſame time.

§ 355.

We ſhall now offer a few remarks on the ANTIASTHENIC METHOD.

The idea which we have of the relation of the ſtrengthening method to the exiſting debility, muſt firſt

firſt be more accurately defined. It is, indeed, true, that wherever there is debility we muſt ſtrengthen; but the choice of the ſtrengthening means to be applied requires great caution. It is not always the properly ſo called ſtrengthening, ſtimulating, animating things, ſuch as cinchona, wine, opium, fleſh diet, &c. that are to be employed, but we muſt uſe, as has been ſaid, the ſo called debilitating means, in order to ſtrengthen.

§ 356.

What infinite miſchief muſt a miſconception of the BRUNONIAN method occaſion, in the hands of thoſe phyſicians who have not previouſly ſecured themſelves from ſuch practical errors by ſufficient theoretic knowledge; and who blindly venture into a path where, according to a beautiful expreſſion of the great Frank, "coals are concealed under deceitful aſhes*." On the firſt view, this ſyſtem has many attractions for empirics; and may readily lead them to uſe ſtrengthening and ſtimulating medicines on every occaſion. They will return to their mithridate, corroborating tinctures, and the brandy bottle, and we ſhall be transferred to the period of a Sylvius. Brown has put into the hands of children a weapon which ought to be wielded only by men. It would be vain to juſtify the unconditional uſe of this mode of treatment, by ſaying, that the greater part of our preſent diſeaſes are aſthenic; and that it is eaſier to leſſen the feveriſh emotions, excited in conſequence of the uſe of immoderately

* *Latet ignis ſub cinere doloſo,* in the preface to his ſon's *Ratio medendi.*

ſtrengthening

ſtrengthening and ſtimulating, that is, heating things, by an oppoſite debilitating mode of cure, than to remove the exiſting debility, and to elevate the depreſſed powers. Is not the febrile ſtate, excited by too violent ſtimulants, a far higher degree of debility than natural debility? Will not this inconſiderate excitement, and the too great activity of the vital principle thence occaſioned, tend to exhauſt? But notwithſtanding theſe objections, which relate merely to miſunderſtanding a method of cure to which we ought to apply more than to any other what Boerhaave ſo often ſaid to his ſcholars, *ſi modum neſcis abſtine*, the merit of the eminent founder of this doctrine muſt ſtill be acknowledged. By a prudent application of its principles, we ſhall be able to remove diſeaſes which have hitherto been accounted incurable. It teaches us the uſe of the ſtimulating, ſtrengthening method, the true mode to be employed in caſes where the life is endangered. But it favours of egotiſm when his ſcholars, induced by his little to be commended example, ſo ſhamefully degrade the ſervices of the moſt eminent phyſicians, ſuch as a Boerhaave, a Sydenham, a Tiſſot, a Zimmermann, a Stoll, a Hufeland, &c. Without ſuffering ourſelves to be miſled by implicit belief in authorities, we ought to adopt the good wherever we find it, and to weigh it in the ſcale of prudence, according to our knowledge of nature.

§ 357.

A retroſpective view of the career which has been paſſed through, will enable us to form a more juſt opinion of our method of cure. In the aſthenic ſtate we find the vital principle ſometimes too violent, and ſometimes

ſometimes impeded in its manifeſtations; alſo leſion of the organization. Our object is to remove thoſe cauſes which impede the free manifeſtation of the vital principle, and to heal the leſion of the organization. But this object we are not always able to accompliſh in that degree which is neceſſary for complete reſtoration to health. Many of the impediments it is impoſſible to remove.

We ſhall now turn to the ſecond indication: to reſtore the free activity of the vital principle. This object we endeavour to accompliſh by ſtimulants. Theſe ſtimulants are perceived in that degree for which the organization is fitted; but the ſuſceptibility of irritation in the organic parts depends both on external relations, the action of the atmoſphere, &c. and on the internal action of the vital principle. Here the two chief indications are united; the regimen of external relations, and the effects on the vital principle.

§ 358.

All theſe different objects are ſo many auxiliaries of nature, which the phyſician muſt promote as far as poſſible, and which he muſt unite together in one point. They evidently ſhew, that the end will not be obtained, when we flatter ourſelves with the idea of removing the aſthenic ſtate, merely by opiates, ſpirituous medicines, and animal food; and that it is often throwing oil into the fire, when, through miſconception of the Brunonian doctrine, we do not endeavour, in aſthenic diſeaſes, to remove the impediments, the remote cauſes of debility, which we certainly cannot overcome by the ſo called ſtimulating,

ſtrengthening method, as by that plan we rather ſhut up the evil in the body than expel it. The gaſtric method, in improper hands, has done great miſchief; numbers of people have been hurried from the world by purgatives, and the caſe has been the ſame with bleeding; but Brunonianiſm, applied unconditionally, certainly does ſtill more miſchief, and it is a moſt pernicious conceit to reject evacuants, emetics, bleeding, digeſtives, and vegetable diet, as inſufficient, and in a GENERAL SENSE, to claſs them among the debilitating means, when they are to be conſidered rather as means which leſſen the exceſs of the activity of the vital principle, or of irritability, and ought therefore to be claſſed among the SO CALLED, debilitating means only, in oppoſition to the ſo called, ſtimulating and ſtrengthening means. BROWN, himſelf, ſo far from rejecting theſe means, admits the neceſſity of them in many caſes, which he deduces from aſthenia. He therefore makes a diſtinction between direct and indirect aſthenia; but his diſciples ſometimes purſue this erroneous method, when they are not able to diſtinguiſh ſthenia from aſthenia, but ſee feebleneſs every where, and preſcribe nothing but ſtimulants and ſtrengthening.

§ 359.

Theſe two indications, both the removing thoſe cauſes which impede the vital activity by the ſo called debilitating means, detergents, emetics, bleeding, inciding and reſolving medicines*, &c. and the direct

* Theſe medicines are indiſpenſably neceſſary; but in regard to their diviſion into *reſolventia, incidentia,* &c. our *materia medica* ſtands in need of ſome reform, on which I ſhall make a few obſervations in the Third Part.

excitement

excitement of the activity of the vital principle, muſt be united with each other. The union of both views, for the accompliſhment of one end, is the ſummit of the art. Sometimes one of theſe indications may be ſuperſeded by the other; ſometimes they are both of utility; and ſometimes they may both be employed in the ſame diſeaſe, but at different times, without being blended together. The clue to guide the phyſician in this labyrinth, is a careful obſervation of the ſtate of the vital principle, and of the organization.

§ 360.

TREATMENT OF DIFFERENT ASTHENIC STATES. We diſtinguiſh the following ſtates:

1. IMMODERATE ACTIVITY OF THE VITAL PRINCIPLE, OR IRRITABILITY AND WEAKENED POWER OF ACTION IN THE ORGANS. (78, 80, 82.)

The indication is: To leſſen the exceſs of irritability, and to ſtrengthen the weakened power of action. This will be effected by the ſtimulating ſtrengthening method.

This is the caſe in continued ſpaſmodic affections, where the organic parts ſuffer by the long duration of a ſtate of too violent irritability; or, in general, in a bodily conſtitution, where great irritability, relaxation, and viſcidity exiſt at the ſame time, as in children; in bilious and gaſtric fevers alſo, where there are great accumulations of crudities, we obſerve ſometimes a great deal of the nervous. The application muſt be made with the utmoſt caution that the exceſs of activity may not be increaſed by ſtimulants. Such corroborants, therefore, muſt in particular be choſen as ſtimulate the leaſt; or ſtimulating medicines muſt be

given in such doses as may produce a narcotic, sedative effect. This end will be best accomplished by the smallest relative doses of opium. But these means, employed alone, will debilitate the power of action in the organs so much the more, and must therefore be combined with strengthening means; a strengthening diet must be employed at the same time. These means must be incessantly employed, so that the sinking of the powers, when the effect of the first dose ceases, may be prevented by the following; and this must be continued till the critical state is removed. In continuing this method, stronger stimulants must be progressively employed to maintain the vital principle in a sufficient degree of activity. (§ 377).

The doses, and, in general, the application of the strengthening method, in this case, require extraordinary caution: in too strong doses the means will become noxious stimulants, by which the already too great activity will be increased, and the power of action in the organs will be more weakened. This holds good both in regard to food and to medicine.

But it is not always that the positive strengthening method can be employed. We must endeavour to remove the causes of suppressed organic power of action, by evacuation and inciding viscidities. On this is founded the process in the so called gastric nervous fevers.

2. IMMODERATE ACTIVITY OF THE VITAL PRINCIPLE, OR IRRITABILITY AND WEAKENED POWER OF ACTION IN THE ORGANS, BUT NOT IN A HIGH DEGREE.

INDICATION. To lessen the immoderate activity.

In this case, the before mentioned debilitating means,

means, as they are called, may be admitted; but as in the progreſs of the diſeaſe the power of action becomes more and more weakened, proportionally ſtrengthening means muſt be applied, firſt combined with reſolvents or gentle evacuants; ſuch, for example, as cinchona, with ſal ammoniac or rhubarb.

3. IMPEDED OR DEFICIENT ACTIVITY OF THE VITAL PRINCIPLE, OR IRRITABILITY AND WEAKENED POWER OF ACTION IN THE ORGANS.

INDICATION. To excite free vital activity and ſtrengthen the organs. The diſeaſes of this claſs are malignant nervous fevers. The ſymptoms of this ſtate are drowſineſs, hebetude of the ſenſes, ſtupidity, a melancholy look, uncommon indifference, extreme debility, incapacity to diſcharge the uſual functions, and the utmoſt laſſitude. Volatile ſtimulants in ſtrong doſes are required, that activity may be excited as ſoon as poſſible. When this is accompliſhed, ſtrengthening means muſt not be forgotten in order to ſupport the organization.

The art of reviving from apparent death depends on the like principles. This ſtate, in general, is the higheſt degree of aſthenia, and will admit of the ſtimulating ſtrengthening method in its full extent. We muſt, however, at the ſame time, endeavour to guard againſt thoſe ſtimulants which weaken the power of action, and to employ the ſtimulants only in the degree neceſſary for reſtoring ſuch an activity of the vital principle as is requiſite for maintaining and preſerving life. As ſoon as we perceive by the external ſymptoms (vital ſigns) that we have attained to this degree, the doſe and ſtrength of the ſtimulants muſt be leſſened, elſe there might ariſe a pernicious vital

activity, disproportioned to the general debility, or a mortal excess of that activity. For this reason the already commencing animation of persons apparently dead, is so often checked by the continuation of too violent excitement, which, however, was before necessary in the state of confined vital activity; or by the application of violent stimulants in the period of commencing perceptible vital activity. (§ 374.)

4. IMPEDED OR DEFICIENT ACTIVITY OF THE VITAL PRINCIPLE, AND IN A LESS DEGREE WEAKENED POWER OF ACTION IN THE ORGANS.

INDICATION. To render the vital activity free, and to strengthen the weakened power of action in the organs.

In this case stimulants may be employed with less caution. The so called gastric means are combined also with the strengthening. Thus in diseases where the organs of digestion are not much weakened, rather larger doses of cinchona may be administered. On the other hand, when the patients are debilitated, or have received severe wounds, moderately stimulating means only can be admitted.

All these different states may successively exist in a disease, and consequently will require a change in the method.

CHAPTER II.

OF THE STIMULATING, STRENGTHENING METHOD OF CURE, OR THE MEANS OF STRENGTHENING TOO WEAK IRRITABILITY.

§ 361.

If properly applied, the ſtimulating, ſtrengthening method, even in the moſt deſperate caſes, may effect a cure; and though perfect reſtoration of the health is not poſſible, it is at leaſt the ſupporter of feeble life, as it prevents the total exhauſtion of the vital principle, and preſerves the vital ſuſceptibility of the organs as long as they are capable of irritation. Brown, therefore, is entitled to no ſmall merit for giving to this method greater extent. But that it may not be prejudicial, ACTUAL VITAL DEBILITY muſt exiſt. I muſt here, however, remark that our firſt phyſicians, ſuch as a Stoll, a Vogel, a Frank, and a Hufeland, were acquainted with the application of this method long before the Scots ſyſtem was introduced into Germany. For the truth of this I ſhall refer to what the above authors have written on the treatment of malignant nervous fevers, where they teach us, at the ſame time, the neceſſary rules of precaution. The ſtimulating ſtrengthening method of cure is certainly capable of farther extenſion; and this is neceſſary in the preſent age of debility. But it requires an acute practical eye to diſcover the exiſtence of actual debility; to diſtin-

guiſh direct from indirect, and real from apparent feebleneſs; which, as is well known, is not the province of every one. Equally great talents are required to apply this method properly; to determine the degree of excitement; and, in general, to know whether the ſtrengthening ſtimulating method can be employed in its whole extent, and to compare the indications and counter-indications with each other.

§ 362.

The prejudicial conſequences of a miſapplication of this method, which we ſo frequently obſerve in the preſent period, by an unconditional adoption of the Brunonian principles, ought to deter every phyſician, not poſſeſſed of theſe talents, from employing it. He ought to know that he takes in his hands a deſtructive poiſon, which he muſt either convert by his art into a beneficial panacea, or leave untouched. To employ ſtimulating and ſtrengthening means where there is an inflammatory ſtate from ſthenia, where the vital principle is in full activity, or rather immoderately active; in bilious fevers, gaſtric impurities, &c.; and for patients ſthenic by the nature of their conſtitution and previous mode of life, is pouring oil into the fire; the inflammation will be increaſed, and ſoon terminate in gangrene; congeſtions will be accumulated, and a violent determination of the blood towards the heart and the brain will take place: hence burſting of the veſſels, hæmorrhages, apoplexy, inſanity, conſtriction of the breaſt, ſuffocation. Beſides, the too great activity of the vital principle will be encreaſed to exceſs; and by this immoderate exaltation of irritability, the power of action will be weakened in the ſame degree;

all

all proportion between action and reaction will be deſtroyed. The vital functions will be carried on therefore, in an irregular manner, and, on account of their deficient activity, there will ariſe obſtructions in the veſſels, and relaxation of the ſolids, as the vital power does not exerciſe ſufficient action. Watery particles are accumulated, and ſecretion and excretion become irregular and deranged. Hence there ariſe ſo often after heating medicines, and after fever has been checked by the uſe of ſpirituous liquors, dropſy, and ulcers. Great miſchief is occaſioned by this method in ſpaſms, produced by too great activity of the vital principle: a diſtinction muſt, however, be made between this kind of ſpaſms and thoſe ariſing from a deficiency of the vital principle in real aſthenia. The ſpaſms are thereby encreaſed in an extreme degree, and, in particular, the determination of the blood towards the head is promoted, ſo that epileptic affections are combined with idiotiſm, or degenerate into apoplexy. The pernicious conſequences of flux checked by heating medicines, has been fully proved by ZIMMERMANN*.

The faculty of being acted upon by ſtimulants is at length totally deſtroyed, if the method of exciting it anew, by the repeated application of ſtimulants, be too long continued; and at laſt it will be impoſſible to bring it into activity by any means whatever. In this manner death will enſue. Hence it happens that medicines which are unneceſſarily adminiſtered, without meaſure, in the ſound ſtate, produce no effect in diſeaſe.

Employed unconditionally, the ſtimulating, ſtrength-

* Uber die Ruhr unter dem Volke.

ening

ening method is rather the means of ſhortening than of prolonging life; for what can waſte life more than unnatural and immoderately exalted activity, combined with the moſt violent irritation of organic parts, while the vital ſuſceptibility of the organization is deſtroyed?

Provided there is not a deficiency of the vital principle itſelf, it is eaſier to call forth and exalt the impeded and weak activity of this principle than to depreſs its too great activity, eſpecially in caſes of actual vital debility, where the injury occaſioned by too violent ſtimulants can not eaſily be repaired. We muſt not imagine that when we have increaſed, in an unnatural manner, the vital activity, by an improper application of ſtimulating or ſtrengthening means, ſo that the before mentioned bad conſequences have already begun to take place, that it will be eaſy to change this ſtate, and to lower it by debilitating means. Nature will not ſuffer herſelf to be ſported with in this manner. The conſequences of the faults committed in this reſpect do not always immediately follow, and unfortunately take place when no change is poſſible. Sometimes they are, at firſt, attended with no ſtriking ſymptoms; and therefore may readily eſcape our obſervation.

Beſides, by theſe ſtimulants the powers are waſted, and the organization is deſtroyed, ſo that no reparation of what has been loſt is poſſible.

In all caſes, the application of ſtimulating, ſtrengthening means requires the utmoſt attention of the phyſician to their operation, and, in particular, he muſt be able to diſtinguiſh whether the activity of the vital

principle is actually exalted in ſuch a degree that the patient is, as it were, reanimated, that the vital functions are diſcharged with more activity, and that the power of action is rather increaſed than weakened. Every thing depends on raiſing the depreſſed vital principle to a mean degree of activity, and guarding againſt immoderate activity.

§ 363.

In general, IMPEDED OR INSUFFICIENT ACTIVITY OF THE VITAL PRINCIPLE, whether it be the conſequence of an actual deficiency of the vital principle, or of impediments to its activity, indicates the uſe of the ſtimulating, ſtrengthening method; but a diſtinction muſt be made between theſe two ſtates. In ſuch ſtates, this method can do great things; as for example, in malignant nervous fevers. Even in caſes where ſigns of commencing death have already appeared, in the utmoſt debility, it will ſometimes preſerve life. Here no other reſource is left than to raiſe the depreſſed vital principle, and maintain it in an exalted ſtate, until nature has recovered herſelf, and the proceſs of life has been put into complete activity*.

* As Frank ſays reſpecting the malignant nervous fever: In ipſo perniciosæ complicatæ decurſu, cum cortice talia ſubinde jungenda ſunt, quæ ſymptomatibus præcipue opitulentur. In ſummo interim furientis morbi periculo, ne præceps vitam ſalvandi aufugiat occaſio, indicationibus aliis, quam vitalibus ſatisfacere non licet, et omne curationis punctum in futuro, facili lethali febris inſultu per corticem avertendo potiſſimum eſt. Nec purgantia febrifugo mixta, antequam reverſuræ febris periculum diſſipatum fuerit ſat tuta ſunt, &c. *De cur. hom. morb.* I. 69.

I. STI-

I. STIMULANTS.

§ 364.

We ſhall firſt endeavour to explain the meaning of ſtimulants.

§ 365.

By STIMULANTS is underſtood, in phyſiology, every thing that exerciſes an action on the organiſm; that is, on the animated animal matter (§ 51.) The difference of the action of external powers on dead and animated matter has been already ſhewn. In the preſent caſe, we ſhall remark the relation between animated animal matter and ſtimulants.

§ 366.

According to this natural definition of ſtimulants, which the phyſician ought always to have before his eyes, all means which produce changes in the animal nature are properly STIMULANTS. Of this kind are emetics and laxatives.

By the term irritation, we muſt not always underſtand a VISIBLE contraction of the fibres, which however always follows the action of ſtimulants on the organization, but in ſo imperceptible a degree as to eſcape our ſenſes.

§ 367.

As we deduce the names and claſſification of our medicines from ſuch of their effects, as are moſt perceptible to our ſenſes, we give the name of STIMULANTS to ſuch things as excite the activity of the vi-

tal

tal principle in a degree perceptible by our ſenſes. Among theſe are wine, opium, all the ſo called exhilarating, ſpirituous, heating medicines. Alſo ſuch things which, by the action excited in the veſſels of the ſkin, by means of the conſenſus of the other organs, increaſe the activity of the vital principle in general, as cantharides, ſinapiſms, &c.

Now, if we compare the mode of action of theſe ſtimulants with the diſeaſed ſtate, and at the ſame time keep in view the vital principle, and the organization, we ſhall be able to form ſome opinion how far they are applicable.

§ 368.

Stimulants ſerve, in general, to bring again into proper play the inactivity, or rather leſſened activity of the vital principle, to reſtore ſuſceptibility of irritation, and to excite irritability. But the application of them requires caution, that the power of action may not be too much weakened at the ſame time. Thus, for example, the irritability of the ſtomach is excited by ſpirituous liquors, or ſpiceries; but by an improper application, its power of action is weakened; an appetite is created, but the power of digeſtion is leſſened.

§ 369.

The degree of the ſtimulant to be employed muſt not be determined by the degree of the inactivity of the vital principle; but by the meaſure of the exiſting quantity of the vital principle.

§ 370.

§ 370.

The whole will depend on this queſtion; whether the inactivity be the conſequence of the vital principle being depreſſed or of an actual deficiency of it.

§ 371.

In the latter caſe, the vital principle, by too ſtrong ſtimulants, will be eaſily exhauſted, and irritability deſtroyed; yet, in this ſtate of actual debility, ſtimulants are neceſſary to maintain life, or at leaſt, to prolong it for a certain period. Under ſuch circumſtances, they muſt be employed with great prudence, and combined with ſtrengthening means; they muſt not be uſed too inceſſantly, that nature may have time to collect her powers; and they ought, above all, to be applied locally to individual organs, in order to excite general vital activity. On this is founded the uſe of veſicatories, in the higheſt degree of aſthenia. The vital activity excited in individual organs, is thus communicated to the reſt. Attention muſt be paid here, in particular, to the principal vital organs: the lungs and organs of digeſtion. Hence the great effect from inhaling vital air, and from the application of veſicatories to the region of the ſtomach.

We muſt chooſe, in particular, for this purpoſe, ſtimulants which excite and ſtrengthen at the ſame time; and among theſe, wine deſerves the firſt place.

§ 372.

The application of ſtimulants in the caſe where the activity of the vital principle is merely oppreſſed, is different. Something is to be expected here from a good

good natural conſtitution, and direct action may be employed to reſtore vital activity, in order that the confined ſtate of the vital principle may be changed. In this ſtate the indications are,

1. TO REMOVE THE IMPEDIMENTS WHICH PREVENT FREE ACTIVITY.

2. THE DIRECT APPLICATION OF STIMULANTS. Sometimes, however, the impediments cannot be entirely removed.

§ 373.

In the application of the ſtimulants, the principal rule is: THE MORE NUMEROUS THE SIGNS OF OPPRESSED VITAL ACTIVITY, AND THE FEWER THOSE OF EXTERNAL LIFE, THE HIGHER IS THE DEGREE OF EXCITEMENT WHICH MAY BE EMPLOYED; BUT THE MORE NUMEROUS THE SIGNS OF EXISTING VITAL ACTIVITY, THE MORE CAUTIOUSLY MUST WE PROCEED WITH STIMULANTS.

§ 374.

In the ſtate of impeded activity of the vital principle, ſuſceptibility of irritation is ſuppreſſed; reaction is deſtroyed, and common ſtimulants make no impreſſion. The application of ſtronger ſtimulants is therefore neceſſary to put in motion the machine which is, as it were, at a ſtand. This ſtate may proceed to a very high degree. Some perſons in caſes of apparent death are inſenſible to the moſt painful ſtimulants, and even to ignited iron.

This obſervation is of great importance, in the treatment of gaſtric nervous fevers, combined with extreme

treme debility, and a great degree of impeded activity of the vital principle. According to the usual method of the bad gastric physicians, evacuants are used, notwithstanding the continual sinking of the powers; and by others who are less injudicious, always emetics. Emetics being too weak to overcome the *vim inertiæ*, occasioned by great viscidity, often produce no effect, and occasion a colliquative diarrhœa, under which the powers are totally lost. People wonder at the increase of the disease, and the death of the patient, who is, however, treated so methodically. We read, therefore, respecting so many gastric, putrid epidemiæ: "All those who were not affected in consequence of the emetics given them died." But here the vital principle is too inactive, and the impediments to its activity, which consist partly in accumulations of foreign matter, and partly in a want of susceptibility in the organs for the vital principle, are so great, that no common emetics or purgatives can remove them. Empirics sometimes employ exceedingly large doses of these medicines, at the hazard of the lives of their patients, to overcome the great viscidity; but such application produces sometimes inflammation and gangrene, with all their consequences and affections, the end of which is death. The real physician, in order to give activity to the vital principle, endeavours to remove the impediments, and then evacuants may produce a proper effect, and without any danger. This end is accomplished by vesicatories, fomentations, bathing, and friction. Sometimes it is necessary to raise the disease to a certain height by means of stimulants; to increase the fever, in order that we

may

may be able to expel the crudities, when the paſſages of the body, the ſkin, bowels, &c. have been opened by greater activity of the functions of ſecretion and excretion: the conſequence then will be a complete favourable criſis, which requires only to be ſupported. A very proper preſcription on ſuch occaſions, is a mixture of Sydenham's laudanum, with tincture of antimony, given in drops, at ſhort intervals, of half an hour or an hour: there ſometimes follows an increaſe of fever, a ſtronger pulſe, drowſineſs, and raving; but theſe ſymptoms need excite no alarm in the phyſician; they are merely critical perturbations. By this method, I have ſaved ſeveral patients, who with the mere gaſtric, or ſtrict antiphlogiſtic method, muſt have been loſt.

§ 375.

In ſuch a ſtate, however, the moſt violent ſtimulants will be employed in vain, if the external impediments, which confine the expanſion of vital activity, be not removed at the ſame time. Perſons apparently dead, muſt be carried away from the ſcene of danger, and thoſe ſuffocated muſt be conveyed beyond the ſphere of the noxious vapours, before any farther means can be employed for their relief. When this firſt precept is fulfilled, reſtoration often follows of itſelf. Moſt has been done for maintaining feeble life, or prolonging it during a certain time, merely by removing the noxious cauſes.

§ 376.

Attention to the SIGNS OF THE EXISTING VITAL

PRINCIPLE, WHICH MANIFEST THEMSELVES, and which are a proof of its commencing activity, is of great importance in practice. This commencing vital activity is feeble; as is the case, in general, with every thing that commences, and under such circumstances we must employ all those rules of caution, which serve to direct our mode of treatment in regard to feeble vital activity, the consequence of feeble life. It is highly necessary, above all, to be exceedingly cautious in the use of stimulants. By violent excitement the feeble flame of life will be in danger of becoming extinct, as is proved by the often fruitless attempts to revive persons apparently dead, in whom the most favourable symptoms existed, and who were already half recalled to life. In the transition from an inactive state of the vital principle, to active life, we can never observe too much caution: it must be effected gradually, and the excitement must progressively increase, according as the vital principle manifests external signs of its activity, and according as perception of the external action of the stimulants becomes more lively, and re-action more active.

§ 377.

But stimulants are necessary in this state, to maintain feeble life, and to guard against a relapse into the former state of inactivity, or against death itself, which immediately follows when the necessary excitement is omitted. In a man struck by lightning, life was so weak, that the uninterrupted application of friction, during ten hours, was necessary before he could be brought to life; for on the least interruption,

the traces of life immediately diſappeared. It is, therefore, of great importance in aſthenic diſeaſes of the higheſt degree, that the ſtimulating and ſtrengthening means ſhould rather be applied frequently in ſucceſſion, after ſhort pauſes, than ſeldom; ſo that when the action of one doſe ceaſes, the action of the next in ſucceſſion may commence, and leave no interruption. In this manner, the vital activity may be maintained, till it diffuſe itſelf more and more throughout the organs, and until feeble life be completely active. Dr. JOSEPH FRANK * recommends, very properly, in malignant nervous fevers, doſes of cinchona and muſk, every quarter of an hour. In this reſpect, the ſtimulating ſtrengthening method, propoſed by Meaſe † is of the utmoſt importance.

§ 378.

Another circumſtance which tends, in a particular manner, to maintain feeble life, is changing the ſtimulants. When ſtimulants of one kind no longer produce an effect, and excite no more activity of the vital principle, there are ſtill ſtimulants of another kind, by which the object may be accompliſhed: as for example, if camphor have no effect, muſk may perhaps be of ſervice. This ceſſation or ſuſpenſion of ſuſceptibility of irritation, depends on habit or hebetude occaſioned by the long application of a ſtimulant. So far the cauſe lies in the organization, and nothing is neceſſary but another kind of ſtimulant, or

* See his *Ratio Medendi.*

† Ueber die Krank. von dem Biſſe lotter hunde, Breſlau, 1798, p. 92.

to change the mode of excitement. Thus, in electric cures, ſtrong ſparks may be called forth, when the influx of the electric matter no longer produces an effect. But inactivity of the vital principle may be the cauſe that re-action is no longer lively, and that ſtimulants of a certain kind no longer produce any effect: theſe ſtimulants, therefore, muſt be ſtrengthened. This gradual decreaſe of inactivity, we obſerve in organs, which have been long kept in a ſtate of UNINTERRUPTED activity, as for example, the organs of thought.

In diſeaſes ariſing from debility, change of diet or of medicine is therefore often attended with beneficial effects. Without this change of ſtimulants, there is produced a ſtate of rigidity and inactivity, which at laſt ends in lameneſs and death. In curing diſeaſes, a great deal often depends on trifles: variations which apparently are of no conſequence, have ſometimes a great influence on patients, and give a new impulſe to the vital principle.

§ 379.

Stimulants may be applied with advantage to organs which are in intimate connection with the reſt; and thus, by the greater activity excited in the vital principle in them, activity is excited in all the ſyſtems, while the whole frame is re-animated. The organ of the ſkin has, in particular, a great influence on the ſyſtem of digeſtion: inactivity of the ſtomach, in the caſe of a certain kind of indigeſtion, may be removed by a veſicatory applied to the back. How active is the organ of the ſoul in conſequence of the conſenſus? Wieland freed himſelf ſeveral times from hypochon-

driac

driac affections, by ſevere mental labour, undertaken on purpoſe. A large veſicatory, therefore, applied to the back, is an excellent ſtimulant, which produces this effect, partly by the violent irritation it occaſions, and which it diffuſes over a great part of the ſurface of the ſkin *.

§ 380.

There are ſome caſes in which the uninterrupted application of weaker ſtimulants is neceſſary to maintain the feeble life; as we revive, by uninterrupted blowing, a fire ready to be extinguiſhed, and which would be inſtantly ſo, if we withdrew the breath from it a moment.

But there are ſtates alſo, where an interruption, or rather leſſening of the excitement is neceſſary. This is the caſe in inferior degrees of aſthenia, where the vital principle exiſts in a higher degree. Reſt is neceſſary to collect the loſt powers. A continual ſucceſſion of ſtimulants blunts ſenſation, and this blunting may at length terminate in complete lameneſs.

§ 381.

To guard againſt this evil, the following method may be employed.

1. THE PREVIOUS EXCITEMENT MUST BE LESSENED FOR A CERTAIN PERIOD. By theſe means waſting of the powers is prevented. This leſſening, where there is a pretty high degree of debility, may be employed much rather than a total interruption of the excitement; becauſe by theſe means, that degree of activity

 neceſſary

* See Hufeland's Journal der prakt. Heilk. Vol. IV. p. 312.

neceſſary for the continuance of life is preſerved. After employing ſtronger doſes of medicines, weaker muſt be adminiſtered, for a certain period; this rule holds good, in particular, in regard to diet. Thus patients after uſing a ſthenic diet, animal food, wine, &c. are ordered to uſe an aſthenic: mere vegetable diet is given them for ſome time, and a part of the ſtimulating food they have hitherto uſed is withdrawn.

2. THE EXCITEMENT MUST BE INTERRUPTED FOR A CERTAIN PERIOD. This method muſt be employed only when an inferior degree of aſthenia exiſts, and when life could not be maintained by its own excitability, unleſs ſupported by external ſtimulants. Such a pauſe is often uſeful, ſo that ſtimulants which before produced too little effect, may occaſion ſufficient excitement.

§ 382.

I muſt here call the reader's attention to the TEMPORARY application of ſtimulants, which is ſo efficacious in aſthenia, and by which hebetude of the ſuſceptibility of irritation, and the leſion of organic parts, which muſt enſue from uninterrupted excitement, and partly the exhauſtion of the vital principle are prevented.

§ 383.

In the laſt place, the excitement is increaſed for A CERTAIN PERIOD. Increaſed excitement, if continued too long, would, however, produce what we wiſh to guard againſt.

§ 384.

§ 384.

CHANGING THE DEGREE OF THE EXCITEMENT, by applying ſometimes ſtronger and ſometimes weaker ſtimulants: ſometimes lowering the excitement below the uſual degree in which it has been before employed, and ſometimes raiſing it far above that degree, is of great utility. It ought to be obſerved, that it is properly this alternation which increaſes the vital activity, as by ſuch combination ſtimulants are far more active than when employed ſeparately.

Several organs muſt be excited at the ſame time, that the vital principle may be put into greater activity. Thus, veſicatories are applied to ſeveral parts, and friction uſed over the whole body; thus, in phthiſipneumony, the uſe of internal medicines is ſupported by veſicatories, and the cautery. By this equal excitement of ſeveral organs, the uniform diffuſion of the vital principle is promoted; and general life is excited in the whole body. On the other hand, excluſive excitement of individual organs impedes the communication of the vital principle to the reſt, and maintains the ſtate of inactive fixed life. This obſervation relates, in particular, to the treatment of perſons apparently dead. We muſt not be contented with merely employing individual ſtimulants, but by the combination of ſeveral, muſt put the vital principle into activity. Beſides, in many organs, the vital principle may be in a leſs fixed ſtate, eaſier to be excited; and, on account of the conſenſus, excitement may be neceſſary in ſeveral organs, to put the vital activity of the one into play by that of the other. This method requires ſome caution in real direct

aſthenia, in order that the weak vital principle may not be exhauſted by too great excitement *.

§ 385.

The STIMULATING MEANS muſt be combined with the STRENGTHENING METHOD. Various corroborants are, at the ſame time, ſtimulants. The object is, to repair the conſumption occaſioned by the too great, or at leaſt too briſk activity of the vital principle.

§ 386.

In this combination of the ſtimulating and ſtrengthening method, we muſt be guided by direct or indirect debility. In the firſt caſe, the quantity of the ſtimulating means muſt be leſs; in the latter greater: the ſtimulating muſt always be combined with the ſtrengthening, particularly in the firſt caſe, elſe the excited vital activity would ſoon ceaſe to act. When the vital principle, without being weak, is in a confined ſtate, as in apparent death, ſtronger ſtimulants are neceſſary in order to render it free, and the ſtrengthening means cannot yet be applied; but the more the vital power is expanded, the more ought the ſtimulating means to be leſſened, and the ſtrengthening method ſhould then be applied. The object here is, merely to maintain the feeble life which has been excited. Stimulants now ſerve only to preſerve the

* I have treated convulſions of long ſtanding with great ſucceſs, by applying from four to ſix veſicatories at once to the arms and legs; ſome of the places it was neceſſary to keep in a ſtate of ſuppuration, others of them were healed, and new veſicatories applied.

the vital activity which has been produced; but the strengthening means to support the continuance of life.

§ 387.

The rule, that, at first, weak stimulants must be employed, and that they ought gradually to be strengthened, holds good in general. This method, indeed, in most diseases, is the surest, as the vital principle will not be exhausted by too strong excitement; but in many cases restoration, in this manner, would be neglected. By the long continuance of excitement, even though weak, susceptibility of irritation would be blunted, so that the application of stronger stimulants afterwards would be attended with no effect. We must keep in mind the principal law, in regard to the employment of the stimulating strengthening method: TO USE THOSE STIMULANTS WHICH ARE SUFFICIENT TO EXCITE A MODERATE ACTIVITY OF THE VITAL PRINCIPLE.

§ 388.

But, to follow this rule, we must take into consideration, the state of the vital principle.

We must here make an accurate distinction between the two following points:

1. THE EXISTING SUM OF THE VITAL PRINCIPLE.
2. THE DEGREE OF THE CONFINED ACTIVITY OF THE VITAL PRINCIPLE.

The former may be sufficient, and yet the vital principle be impeded in its manifestations. If the activity of the vital principle, or irritability, be confined in a great degree, and consequently be very insufficient

ſufficient for animating the body completely, ſtronger ſtimulants are immediately neceſſary to remove theſe impediments. Suſceptibility of irritation, in this caſe, is ſo very ſmall, that it can be affected only by the ſtrongeſt ſtimulants: it is by theſe alone that re-action can be excited; that is to ſay, that the vital power can be rendered perfectly active. In ſuch a ſtate, by deferring too long application of more powerful means, reſtoration would be retarded. Various caſes of apparent death may ſerve as examples. This ſtate is obſerved in bodies where there are great relaxation and viſcidity. In ſuch caſes injections of tobacco might be employed.

§ 389.

We muſt never forget to leſſen this violent excitement, as ſoon as perceptible traces of the activity of the vital principle begin to be manifeſted; otherwiſe we ſhall run the riſk of extinguiſhing the feeble flame of life, which juſt begins to gleam. Much leſs muſt we, in ſuch caſes, increaſe the excitement. On this depends the treatment of thoſe who are beginning to recover from the ſtate of apparent death.

On the other hand, where the vital principle is completely active, or where traces of irritability appear, and re-action is exeeedingly lively, we may begin with a weaker degree of excitement, and GRADUALLY increaſe it, as the re-action becomes leſſened.

§ 390.

We muſt attend, however, not only to the STRENGTH but rather to the KIND of ſtimulant. What cannot be effected by the ſtrongeſt ſtimulants may be accompliſhed

compliſhed by changing them. Many things are ſtrong ſtimulants to ſome, and yet do not affect others.

The cauſe lies in the INDIVIDUAL SUSCEPTIBILITY OF THE ORGANIZATION FOR CERTAIN STIMULANTS. In this reſpect, what wonderful inſtances of ſympathy and antipathy! It is, therefore, of the utmoſt importance that the phyſician ſhould be acquainted with theſe in his patients. Many perſons are affected by exceedingly gentle ſtimulants; while ſome are not affected at all by others much ſtronger. On women, ſubject to hyſterics, a burnt feather can produce a great effect. Idioſincracy, temperament, and inclination, are here to be taken into conſideration, as well as the conſtitution of the body. How many are violently agitated, attuned to the higheſt joy, or the deepeſt melancholy, by certain ideas which have an effect on them alone. Theſe mental ſtimulants may be employed, but with caution, to rouſe from a ſtate of inſenſibility. Sometimes we have no other means left to maintain feeble life. We muſt ſtudy people's favourite attachment. Perſons fond of muſic, when apparently dead, may be arouſed by muſic. We thence ſee how much may be effected by the peculiar activity of one organ, in order to remove diſeaſes ariſing from ſuppreſſed irritability. The activity of the organ of the ſoul is particularly efficacious.

§ 391.

We muſt pay attention to the particular activity of individual parts of the body. This activity is either ORIGINAL, in the organic ſtructure of the body; ſuch,

ſuch, for example, as the great ſenſibility of the eye; the peculiar ſenſibility in the region of the heart, in which the *plexus coeliacus* lies; or ACCIDENTAL, a conſequence of the leſion of organic parts, or of changes in the interior of the organization. By theſe means individual organs of the body become exceedingly irritable, though irritable before in a very ſmall degree. Hence the great ſenſibility of the ſtomach, or of the organ of the ſkin; the unnatural ſenſibility of the eye, the immoderate delicacy of the ear. Phyſical condition, education, diſeaſes, and the mechanical or chemical leſion of organic parts, have here a conſiderable influence.

A knowledge of this peculiar ſuſceptibility of ſtimulants is of the utmoſt importance to the phyſician, and enables him to make a proper topical application of ſtimulants to every irritable part. Thus in caſes of apparent death, the eye has been excited by dropping into it ſome ſtimulating fluid, and in caſes of confined vital activity, ſtimulants are particularly applied to the region of the heart.

§ 392.

Stimulants are either GENERAL or LOCAL. The former produce general changes in the organization, but the effects of the latter are confined to individual organs. Thus, for example, wine is a general ſtimulant; a veſicatory applied to the ſtomach a local. But this diſtinction only ſhews, that in many caſes the ſtimulants applied to individual parts of the body produce changes in theſe, in particular; but that in other caſes ſtimulants are employed for the purpoſe of producing general changes in the conſtitution.

The

The action of the former, however, extends chiefly, but not excluſively, to individual organs.

§ 393.

But local cannot be ſubſtituted for general ſtimulants; and often when applied alone, they are of no benefit in general diſeaſes. This is as ridiculous, as Brown ſays on another occaſion, as if we ſhould attempt to root up a tree by lopping off one of its branches. This may ſerve to ſhew the fallacy of the method followed by the common people, who think they can remove all internal diſeaſes by external means; and who endeavour to cure the flux, or bilious fever, by plaſters applied to the ſtomach, or pain in the head, which ariſes from internal cauſes, by external bandages. Mankind are led into this error by a partial knowledge of diſeaſes, and confined notions deduced from individual ſymptoms.

§ 394.

Local ſtimulants, however, are indicated in the following caſes:

1. In LOCAL DISEASES; local affections of individual organs; for example, diſeaſes of the eyes, flux, rheumatiſm. An important inſtance of irritability locally deficient in a high degree, is afforded us by the gutta ſerena. The only effective means in this caſe are ſtimulants: electricity applied externally and internally, belladonna, mercurials, &c.; but what ſerves ſtill more to confirm this obſervation is, the late ſucceſsful cure of the gutta ſerena by the external uſe of

of a cold infusion of cayenne pepper, in the proportion of a grain to an ounce of water *.

2. BY PARTICULAR ACTION ON INDIVIDUAL ORGANS, AND THE EXCITEMENT OF GREATER VITAL ACTIVITY IN THEM, TO PRODUCE GENERAL EXCITEMENT IN THE ORGANIZATION. Thus we exercise an action on the organ of the soul, on the stomach, on the skin, &c.

In the first case, in particular, local must be combined with general means; we must not depend on either of them alone, else we should effect only transient changes, an activity of the vital principle which would soon be again exhausted. Besides, the long continued irritation of individual organs produces at length hebetude in the susceptibility of irritation; a partial indirect debility, and makes such a part a point of commencement for disease *(atrium morborum)*. To give a striking instance, what avail internal medicines in the diarrhœa, if attention is not paid, at the same time, to pure air?

§ 395.

Stimulants are partly SPIRITUAL, and partly PHYSICAL. Under the former, we comprehend those which, by exalting the activity of the powers of the soul, exercise an action on the organ of the soul: the passions, mental occupation, the exercise and exertion of the spiritual powers; under the latter, such as have an action on the other organs. The common, or simultaneous excitement, produced by both kinds of stimulants, is more efficacious for exciting vital activity. The

* Memoirs of the Medical Society of London, Vol. IV. 1795.

The efficacy of mental ſtimulants, in many caſes, is well known; ſuch, for example, as exhilirating mental impreſſions. If the phyſician is able, at the ſame time, to ſtrengthen the feeble body, life will be better maintained, and health ſooner reſtored. On the other hand, the action of medicines is promoted by mental exhiliration, and the activity of the vital principle is excited; excretion and ſecretion, which were before carried on in a ſluggiſh manner, become more lively; aſſimilation and nutrition acquire more activity; and the whole object of the cure, to produce changes in the interior of the organization, by external ſtimulants, is obtained.

§ 396.

Stimulants may be divided into different claſſes, according to their mode of action; but we muſt never forget that this mode of action, in regard to ſuſceptibility of irritation, is relative. We ſhall firſt mention, gentle, violent, and extremely violent ſtimulants.

1. WEAK STIMULANTS.

In the application of theſe various points are to be conſidered.

(a) THE STATE OF THE VITAL PRINCIPLE. If the ſum of the vital principle is exceedingly ſmall, weak ſtimulants only muſt be applied, leſt the vital principle ſhould be exhauſted; for example, in great old age. If the activity of the vital principle is eaſy to be excited, too ſtrong ſtimulants will produce an exceſs of activity, as is the caſe in new-born children. In the tranſition of confined activity of the vital principle to free efficacy, weak ſtimulants only muſt be employed.

employed. Is the vital principle immoderately active in individual organs, too ſtrong ſtimulants muſt be avoided, that this activity may not be increaſed. Greater vital activity in individual organs muſt alſo be attended to; as for example, in the brain. Hence the prejudicial effects of ſtrong ſtimulating things, ſuch as the ſpirit of ammonia, hellebore, &c. The organs of ſmell can bear no ſtrong ſtimulants; they are immediately transferred to the brain. Now if the activity of the vital principle is exalted in an unnatural degree, which produces a great determination of the juices to the head, ſtrong ſtimulants muſt be extremely injurious.

(b) THE STATE OF THE ORGANIZATION. When the organs have been injured, weaker excitement muſt be employed, though, in other reſpects, ſtimulants may be neceſſary for maintaining life. This obſervation is of great importance in regard to curing the phthiſipneumony at the period of ſuppuration, where, though gentle ſtimulants may be neceſſary to maintain the activity of the lungs, by which expectoration is promoted, ſtrong ſtimulants, on the other hand, would bring the ulcers to burſt, with the danger of ſuffocation. This obſervation is of importance likewiſe in curing the angina; alſo in treating the dropſy, in regard to the uſe of draſtic purgatives, or diuretic medicines.

2. STRONG STIMULANTS.

The application of theſe depends, in general, on the before-mentioned points: the ſtate of the vital principle, and of the organization. They are to be employed in the following manner:

(a) AFTER THE PREVIOUS USE OF WEAKER STIMULANTS,

MULANTS, by which ſuſceptibility of irritation has, in a certain degree, been called forth, ſo that ſtronger excitement is now neceſſary to render life completely active. There are caſes where this method muſt abſolutely be followed; and where, by the ſudden application of ſtrong ſtimulants, irritability would be deſtroyed. Stimulants, therefore, muſt be applied in ſuch a manner as to be gradually increaſed (§ 387.)

(b) THE IMMEDIATE APPLICATION OF A VIOLENT STIMULANT, to put the confined vital principle into activity at once. This is requiſite in various caſes, where, by too long delay, and making many experiments with weaker ſtimulants, the favourable moment would be loſt. Thus in a higher degree of confined efficacy of the vital principle; of inſenſibility for the common ſtimulants, and of weakneſs of re-action, without the ſpeedy excitement of that activity requiſite for life, life will ſoon be at an end. The longer the complete action of the vital principle on the organization is impeded, the more the vital ſuſceptibility of the organization is loſt; the more its faculty of being acted upon by ſtimulants decreaſes, and the longer this ſtate continues, the ſtronger ſtimulants will be required to remove the impediments to the free activity of the vital principle. Of this we have an inſtance in apparent death.

(c) STIMULANTS OF THE MOST VIOLENT KIND. The utility of theſe is evident from what has been already ſaid. They can appear cruel only to thoſe who are not acquainted with the ſtate of vital activity, confined in the utmoſt degree, when it is abſolutely neceſſary by the application of violent ſtimu-

lants to the exterior organs, to effect a uniform distribution of the vital principle. The pain which the application of them may occasion is beneficial.

§ 397.

In regard to the consequences, we observe sometimes a speedier, and sometimes a slower effect; the cause of which lies partly in the nature of the stimulants, and partly in the state of the organization.

The animated organization is more or less susceptible of irritation; is more or less affected by the influence of the vital principle. This modification is so changed, that stimulants are more perceived at one time than at another; have a greater or less action on the vital principle. This difference of susceptibility is remarked, in a very striking manner, in diseases. Stimulants therefore have at one time a speedy action, and at another a slow. Sometimes the stimulants are perceived, but re-action is impeded. The effect does not follow till re-action is gradually rendered free.

But there are stimulants also which, on account of their peculiar nature and strength, produce very speedy effects; such as æther, musk, camphor, the application of cold and heat as stimulants. Such stimulants must be employed with great caution, that the vital principle may not be exhausted at once.

Other stimulants have a much slower, but a continued effect; the changes which they produce in the organization cannot be observed till after a certain period. Among these are cinchona, bitter substances, and in general tonic medicines.

Some means operate as stimulants by the suddenness

neſs of their application, as they inſtantly produce a ſtate contrary to that which previouſly exiſted. Thus many debilitating things act as ſtimulants; for example, the ſudden application of cold.

Other ſtimulants have a longer continued effect; they are of a weaker degree. To this claſs belong ſtimulating, ſtrengthening things; cinchona, different kinds of food, and particularly vegetable diet. We employ theſe after irritability has been called forth by volatile ſtimulants.

II. Corroborants.

§ 398.

We ſhall here add a few obſervations reſpecting the uſe of corroborants. Nothing is more common than to ſay, that feeble life muſt be ſtrengthened. But people, without determining where actual debility exiſts, and whether and how far the ſtrengthening method is applicable, are miſled by miſtaking the Brunonian ſyſtem; extend the idea of aſthenia too far, and employ the ſtrengthening method too unconditionally. It is neceſſary, therefore, to examine the injury which ariſes from an improper uſe of corroborants.

§ 399.

1. The hurt occaſioned by the unconditional uſe of ſtrengthening means in ſthenic diſeaſes, by which irritability, a diſpoſition to inflammation is called forth and promoted.

2. The hurt occaſioned by ſtrengthening means, when employed unconditionally, in caſes of indirect feebleneſs.

3. The ſtrengthening method is prejudicial alſo in direct aſthenia, as the dormant morbid prediſpoſitions, which might otherwiſe have long lain concealed in the body, are thereby called forth. By this new morbid ſtimulus the danger is increaſed, and feeble life oppreſſed. I here allude to the unconditional uſe of the ſtimulating ſtrengthening method. Melancholy inſtances of this are exhibited by the perverted method of cure employed in the gout and hypochondriaſis.

§ 400.

There is a great difference in the application of the ſtrengthening method in the caſe when the full ſum of the vital principle is preſent, and its efficacy is free; and in that when it is deficient, or when the activity is too violent or irregular. In the diſeaſed ſtate, ſome things become ſtimulants which in the ſound ſtate are not ſo; and, on the other hand, perſons labouring under diſeaſe are affected by powers which exerciſe no conſiderable action on thoſe who enjoy good health. This is the conſequence of ſuſceptibility of irritation, and irritation being in the diſeaſed ſtate exalted ſometimes above the natural ſtate, and ſometimes depreſſed below it. This makes a change neceſſary according to the ſtate, whether ſound or diſeaſed.

§ 401.

But, in general, the ſtrengthening method can be employed only with certainty when the cauſes of the exiſting feebleneſs have been previouſly removed. In any other caſe it is either uſeleſs, or takes a prejudicial

cial direction. When, for example, the gaſtric impurities have not been evacuated, and attempts are made to ſuppreſs fever immediately by cinchona, this object is either not accompliſhed, or there ariſe ſerous tumours, and other conſequences of checked fever. I allude here to caſes where theſe debilitating means, evacuants, can be endured. The method, therefore, before ſpoken of §. 363. § 374. has an entirely different object. Beſides, to remove the cauſes of debility, evacuants are not always neceſſary: a change of regimen only and ſtimulants are often employed to exalt the depreſſed activity of life; often digeſtives and the like. I muſt here obſerve, that no unconditional application of the purgative method is to be recommended.

§ 402.

The meaning of the term corroborants muſt be defined a little more accurately. There are DIRECT as well as INDIRECT corroborants. To the firſt claſs belong thoſe things by which the impediments to the free action of the vital power are removed; to the ſecond, thoſe by which the feeble vital principle is rouſed and properly ſtrengthened. Both theſe corroborants have often been confounded, which has given riſe to many practical errors. It is a very important obſervation, and here in place, that in the ſtate of real debility, where, in general, there is a deficiency of the vital principle, this principle may be exceedingly active in ſome of the organs, while it exerciſes only a very feeble action in the reſt. (§ 94.) Thus the moſt violent delirium takes place in extreme debility, on account of the immoderate activity in the organ of the

ſoul. Debilitating means, therefore, that is, means which have been topically applied to leſſen the immoderate irritability, may, in regard to their conſequences, be conſidered as real corroborants; ſuch as cold fomentations in phrenitis, though they properly have a debilitating action. Hence, there ariſe many dangerous deceptions, by which ſthenia and aſthenia are confounded, and alſo falſe concluſions reſpecting diſeaſe.

§ 403.

Real corroborants ought neither to weaken the power of action, as irritability would thereby be depreſſed; nor to increaſe irritability, as the power of action would thereby be leſſened. Cold, therefore, cannot be a corroborant, nor yet heat, which leſſens irritability as well as the power of action.

§ 404.

The great benefit of ſtrengthening means is ſhewn by the following effects:

1. EXALTING THE ACTIVITY OF THE VITAL PRINCIPLE.

2. BY PRESENTING MATTER FOR THE REPARATION OF LOST ORGANIC PARTS.

§ 405.

This exaltation of the vital principle, or of irritability, may be carried to a mean degree, ABOVE OR BELOW which it occaſions indiſpoſition and diſeaſe.

Heat, light, and all ſtimulants, come under the firſt head: they exalt the vital principle, and thereby ſtrengthen;

ſtrengthen; as the confined functions of the body are again rendered free.

§ 406.

The ſecond claſs are modified through different degrees, according to the different kinds of ſubſtances, and have an immediate action on the organization. To this claſs belong all nouriſhing ſubſtances, and what is properly called food. Theſe ſubſtances may be communicated to the body different ways; as not only the proper organs of nouriſhment, but the whole ſurface of the body is capable of receiving them; and all thoſe ſubſtances which by means of their nature, aſſimilation, and animalization, are converted into organic parts, deſerve to be called nouriſhing ſubſtances. In this manner the atmoſphere itſelf contains nouriſhing matter for our bodies. But we conſider them here as corroborants.

Theſe nouriſhing matters acquire more the character of corroborants, according as they contain a moderately ſtimulating quality; that is, a proper combination of the two claſſes of corroborants, gives to ſubſtances this property in perfection. They not only ſupply matter for the reparation of loſt organic parts, but they ſtimulate; that is, they make the vital principle fit to co-operate towards a proper reception of it: they promote, at the ſame time, the neceſſary aſſimilation and animalization. They muſt, however, not poſſeſs too much of the ſtimulating quality, otherwiſe they would increaſe in too great a degree this activity of the vital principle or excitability; the conſequence of which would be imperfect aſſimilation and animalization; ſo that the nutritive parts which

are peculiarly deſtined to become component parts of the organization, would be neither completely ſeparated nor perfectly animalized, and would afford bad nouriſhment, rather of a debilitating nature.

§ 407.

The neceſſity of uſing nouriſhment more or leſs ſtimulating depends on the exiſting ſtate of excitability, whether weaker or ſtronger, in conſequence of habit or of other circumſtances. Many people, therefore, to be ſufficiently nouriſhed, have need of food exceedingly ſtimulating: others acquire ſtrength by very light, thin food. To be convinced of this, we may compare the various kinds of food uſed in different climates; alſo the need which epicures have of ſpices and ſpirituous liquors.

§ 408.

As an illuſtration of the preceding obſervations, it may be remarked, that the moſt nutritive and ſtrengthening food conſiſts of a proper combination of animal and vegetable ſubſtances. Mere vegetable food rather debilitates; becauſe it contains a leſs quantity of ſtimulating matter, or rather becauſe in vegetables this ſtimulating matter is not animalized; that is to ſay, is not ſo intimately mixed with the other component parts, and ſo fitted for the operation of the animal organs of digeſtion, as is the caſe in animal ſubſtances. Mere animal food, however, is too ſtimulating; exalts excitability in too great a degree, and therefore is rendered more nutritive by the addition of milder vegetable food.

§ 409.

§ 409.

From the before-mentioned properties of corroborants, we may diſcover the difference between ſtrengthening medicines and nouriſhment. Medicines operate for this purpoſe, in particular, by their ſtimulating qualities mixed with nutritive particles. This kind of mixture of their component parts, determines their fitneſs in regard to the ſtate of the patients. Where the activity of the vital principle is weak, we muſt make more uſe of ſtimulating corroborants; thoſe volatile ſtimulants, wine, muſk, æther, &c. in order to exalt excitability. But if the vital principle is not much weakened, and if irritability exiſts in a ſufficient degree, while the power of action ſuffers, nutritive corroborants ought to be employed: cinchona, nouriſhing food, &c *. Theſe two caſes, however, ought not to be too much ſeparated, and we muſt not forget to fulfil both indications, properly, in order that, while we animate depreſſed excitability or irritability, we may be able, at the ſame time, to ſtrengthen the power of action.

§ 410.

The degree of the ſtrengthening method to be applied muſt be determined from obſervation of the exiſting degree of aſthenia. We muſt recur to the beforementioned difference between direct and indirect feebleneſs, or the caſe where the vital principle is

* The celebrated Frank, in treating of continued gaſtric fever, gives ſome obſervations which deſerve to be read, and which may ſerve to illuſtrate what has been here ſaid. *De curandis hominum morbis.* Lib. I. 176.

is actually deficient, and that where it is merely suppressed.

§ 411.

In the first case we must make choice of such corroborants as are endowed with a less stimulating property, but at the same time well prepared, and in particular animalized nourishment. A good deal will depend on the quantity in which they are applied. In a too great relative quantity, nourishment in the state of asthenia is prejudicial, partly by its volume, which is too great to be taken up and prepared by the organs of digestion, and partly by the greater irritation which such a large quantity of food naturally excites, and which is increased by the volume. This observation may be applied to the nourishment of man in the first years of life, as well as in old age. Both these asthenic states require finer and well prepared nourishment, which the more it is animalized becomes the fitter for use; the more strengthening, digestible, and nutritive. Milk drawn immediately from the breast has these properties in the most perfect degree. The last period of human life is a return to childhood. Agreeably to this hint, furnished by nature, in extreme old age we should recur to the nourishment of childhood, combined with tender, nutritive, animal food, lean soups, jellies, &c. Thus milk sucked immediately from the breast, would, without doubt, be an excellent means for prolonging feeble life in old age.

§ 412.

In indirect debility, where the activity of the vital principle

principle is merely ſuppreſſed, corroborants which poſſeſs more of a ſtimulating property may be employed, becauſe leſs injury is here to be apprehended from the conſuming power of the ſtimulant; for example, animal food in its full extent, alſo cinchona with wine, and other exhilarating things.

The ſtrengthening method requires the greateſt caution, not only in the choice of the corroborants, but alſo in their application; and the conſequences muſt always be obſerved with the utmoſt care. This obſervation will tend to enlarge our deficient knowledge reſpecting the relation between the healing means and diſeaſe, and to lead to a more rational proceſs. It is not poſſible to give definitive rules for individual caſes: practical ſagacity, experience, and general knowledge, muſt be called in to our aid, where the ſtrict application of theory to practice cannot be admitted; for feeble life would be extinguiſhed before the phyſician, who adheres too cloſely to all the ſubtilties of theory, could conclude his reſearches.

§ 413.

The application of corroborants is partly GENERAL, and partly LOCAL, according to the nature of the exiſting diſeaſe. The general ſtrengthening method is applied indeed in every caſe of debility, in order to exalt the vital principle, and to repair the loſs of organic parts; but we employ it locally, when we obſerve any particular debility in individual organs. Sometimes one organ ſuffers more than another by debility, or is almoſt excluſively affected; as for example, the lungs, the ſtomach, the organ of the ſoul. In that caſe we muſt endeavour to ſtrengthen the enfeebled

feebled organ by local means; but in regard to these topical means, we must entertain no idea of specifics, but only of means, which, by their internal properties, are calculated to have an exclusive action on a certain organ. This, however, will depend on the local application. Thus lame parts are strengthened by bathing, and by fomentations topically employed; thus inhaling vital air strengthens the lungs, and thus the organ of the soul is strengthened by exhilarating ideas. The local application of corroborants has naturally an influence in strengthening the whole body in general; but it is most efficacious in regard to that organ to which it is principally directed.

§ 414.

By strengthening the principal organs, we strengthen, at the same time, the other vital organs. What beneficial influence is produced, therefore, on the whole nature of man, in regard to the duration and maintenance of life, by strengthening the stomach and the lungs!

§ 415.

Under the term STRENGTHENING we must not comprehend merely continual excitement, and the influx of a large quantity of nutritive matter, but the general attention and care of the physician to maintain an equilibrium of the powers; sometimes to remove the causes of immoderate irritability, and sometimes the impediments which occasion too weak vital activity; direct or indirect strengthening means must therefore be employed, according to the nature of the state.

§ 416.

§ 416.

During the uſe of ſtrengthening means we muſt, at the ſame time, avoid all thoſe cauſes which maintain and increaſe debility; as for example, inſalubrious air, warm apartments, warm beds, &c.

§ 417.

In the ſtrengthening regimen, we muſt pay particular attention to every thing that comes in contact with the ſurface of the body, as the importance of the organ of the ſkin has been already explained. Hence care muſt be taken to promote cleanlineſs in general, by bathing, &c. and by paying proper attention to the ſkin.

CHAPTER III.

ON THE MEANS FOR LESSENING IMMODERATE IRRITABILITY.

§ 418.

THERE are certain ſtates in which irritability is unnaturally exalted, and the activity of the vital principle ſo exceſſively diſproportioned to the nature of the organization, that there is reaſon to apprehend that the vital principle will be exhauſted, and the organization rendered unfit for life. This unnaturally exalted irritability is either general or relates to individual organs in particular. We ſhall here conſider it in the ASTHENIC STATE, which BROWN calls indirect debility; but in treating it we muſt never loſe ſight of the exiſting vital debility.

§ 419.

We muſt endeavour to change this unnatural ſtate by external application. The means to be employed for this purpoſe may, in a certain ſenſe, be called DEBILITATING MEANS; as they free the body from the pernicious effect of a power which exerciſes on it an unnatural action, or rather confine the action of this power, without weakening the power itſelf. In this caſe they ſhew themſelves as indirect debilitating means.

§ 420.

§ 420.

To effect this we must first endeavour to remove the causes which maintain or increase the immoderate irritability. These are:

1. INTERNAL STIMULANTS, an excess of juices; accumulation of the juices in individual parts; impurities of the *primæ viæ*; any kind of foreign matter in the body.

2. EXTERNAL STIMULANTS, great heat and cold; stimulating food, spirituous liquors, mechanical lesion of the body, &c.

§ 421.

These causes are removed either IMMEDIATELY or BY DEGREES. When they threaten a speedy extinction of life, they must be removed instantaneously; thus we draw drowned persons from the water, and remove from mephitic air those who have been suffocated. Sometimes, however, these causes are removed only gradually, because by a sudden change of the external stimulants, there might be danger of destroying life at once, or at least of rendering the state of the patient worse. Thus, to persons frozen to death heat must be applied by degrees, and drunkards must be weaned from their habit by gradually lessening their quantity of spirituous liquor. (§ 475.)

§ 422.

In this mode of treatment we are guided by observation of the state of the organization, and of the vital principle; the greater or less manifestation of the activity of the vital principle; the solidity or relaxation

tion of the organic parts; the external conſtitution of the body, temperature, &c. Thus external exciting means are applied, in proportion as the natural internal heat is called forth. This effect we immediately endeavour to promote by friction, animating means, &c.

To remove the external cauſes, forms the firſt and principal part of the anti-aſthenic mode of cure, and will accompliſh the end in all caſes, except thoſe where the vital principle is ſo depreſſed that it muſt be excited by ſtimulating corroborants.

§ 423.

In the direct aſthenic ſtate, we cannot depend on thoſe means alone which remove impediments; on the contrary, when employed too long, or to a certain degree, there is ſome danger of their increaſing the debility, and making the diſeaſe terminate unfortunately; ſo that the patient will die in conſequence of exhauſtion, before the ſtrengthening method is begun; or the debility will be ſo much increaſed, that the application of ſtrengthening means will be inſufficient. By a gaſtric cure in nervous fever, carried to exceſs, or improperly applied, even when the patient, on account of a good bodily conſtitution, has withſtood the moſt violent attacks of the diſeaſe, ſuch a direct aſthenia, combined with the greateſt irritability or excitability, will be occaſioned, that the convaleſcent will ſcarcely be able to endure the common ſtimulants, and the neceſſary ſtrengthening nouriſhment, and will attain very ſlowly to health, or will die through debility and unſuſceptibility of the neceſſary reſtorative regimen. It may readily be perceived that I

here allude to an abuſe of the ſo called gaſtric and antiphlogiſtic methods.

§ 424.

On the other hand, neglect of the principal indication, to remove the cauſes of aſthenia, is highly pernicious. The evil is ſtill nouriſhed, and new matter is collected to maintain and increaſe the diſeaſe; when, for example, notwithſtanding the application of proper medicines, an improper conduct is purſued.

Sometimes the impediments cannot be removed directly; and, in that caſe, we muſt, at leaſt, endeavour to accompliſh our object indirectly.

§ 425.

Too great irritability, notwithſtanding the exiſtence of the aſthenic ſtate, may be leſſened, in a certain degree, by the application of debilitating means. Sometimes the prolongation of life depends upon this method, when employed with caution. The external ſtimulants muſt be depreſſed below the uſual degree. Under this head may be claſſed the temporary application of cold, light vegetable diet, moderate evacuants. But ſuch means muſt neither be continued too long, nor applied in a high degree. For a certain period, they may be attended with the happieſt effects; may produce a more uniform diffuſion of the vital principle; by alternation may excite more elaſticity of the ſolids, and remove irregularity in the natural functions; but if too long uſed they exerciſe their debilitating power. In this application the immediate obſervation of the phyſician is neceſſary, to point out

theſe pernicious conſequences, and to prevent them in proper time.

Every thing depends on the degree of aſthenia. There muſt always be ſufficient ſtrength to ſupport the agitation which this method occaſions; and there muſt even be ſuch a ſtock of powers as to admit of ſomething being taken from them without danger. In a high degree of aſthenia, the ſo called debilitating means cannot be applied, as the vital principle would thereby be ſpeedily exhauſted. Thus I have often ſeen death haſtened by bleeding: this may be illuſtrated by the treatment of real nervous fever.

The degree in which theſe debilitating, irritation-leſſening means can be employed muſt alſo be conſidered. The choice of theſe means is of great importance. In aſthenic diſeaſes emetics are preferred to purgatives, becauſe it has always been obſerved that the former debilitate leſs than the latter. In aſthenic inflammations bleeding muſt be ſparingly employed, and among the gentle detergents thoſe are choſen which produce the leaſt relaxation in the tone of the bowels; for example, rhubarb: ſtrong evacuants ought, in general, to be avoided.

But this temporary moderate debilitating method is not to be entirely rejected, even in aſthenic diſeaſes. It is the moſt efficacious for conveying off and leſſening the unnatural irritability, and it is a very unfortunate miſconception of the Brunonian ſyſtem, to omit bleeding and evacuants entirely in aſthenia. The doctrine of thoſe excellent phyſicians, a FRANK and a VOGEL, is entirely different. By theſe we are taught that all the excretory and evacuating ducts muſt

muſt be preſerved free and open *; and that by emetics, employed in proper time, we muſt expel ſlimy accumulations, and thus, by removing the impediments at once, open the way through which we are enabled to convey into the body corroborants, which will then produce, with more certainty, the wiſhed-for effect. We know by experience the melancholy conſequences of an oppoſite method, when people hope to remove the diſeaſe by ſtimulating and ſtrengthening means alone. Let us here only reflect on the bungled cure of intermittent fever.

§ 426.

In applying the ſtimulating ſtrengthening method, and the ſo called debilitating means, for expelling and carrying off accumulated crudities, a diſtinction muſt be made between the COMMENCEMENT and the PROGRESS of diſeaſe. When a diſeaſe is commencing, it often may be cured merely by ſtimulating means; means which excite the vital principle to ſuch activity, that the commencing derangement is removed. Thus the conſequences of fear may be immediately prevented by ſpirituous exhilarating things, ſuch as wine, if taken ſoon after the pernicious impreſſion; and in the like manner the breaking out of an infectious diſeaſe, in its very commencement, on the firſt ſenſation of debility, laſſitude, ſhivering, and feveriſh affections, may be checked by cinchona or camphor, wine, æther, &c.

In this firſt period of diſeaſe, the main object is to ſet free the oppreſſed activity of the vital principle, and

* In treating malignant diſeaſes, that excellent precept *feſtina lente* cannot be too much recommended to phyſicians.

and to effect again an uniform distribution of it, which can be done only by stimulating, strengthening things. In this precious moment it is yet possible to avert the mortal disease; but unfortunately it is only a moment, and a little farther this method of cure, in other respects so certain, will be too late.

On the other hand, in the first period, debilitating means, that is, evacuants, bleeding, &c. must be prejudicial; must promote and increase the disease, open the passages for infection, as they entirely depress the still remaining activity of the vital principle, and increase unnatural irritability by exhausting the power of action, and injuring the organization itself. Hence it appears what mischief must arise from the unconditional use of emetics and bleeding, so much employed by the empirics. The vital activity, necessary for removing the disease, is weakened; the organic parts are so far injured, that they are deprived of a great part of their susceptibility for the vital principle, and their substance even is mechanically deranged, if, as usual, these means are employed in strong doses, which will then make them act as poisons. These, however, are cases where the activity of the vital principle is weakened by the influence of certain powers, which immediately attack that principle, and of which the consequence is lesion of the organization; for example, mental stimulants, violent fear, infectious poison. Lesion of the organization manifests itself either sooner or later; and this difference must be attended to in the application of the stimulants.

Of a different kind are those cases where the organization is injured, and where the most visible and most pernicious changes are produced in it; as for example,

ample, by poiſons. In ſuch caſes we muſt, above all things, remove thoſe foreign matters which deſtroy the organic parts; and where this is not poſſible, we muſt at leaſt leſſen their pernicious effects. This may be accompliſhed, in caſes of poiſon, by emetics ſpeedily adminiſtered, and mucilaginous, oily liquids. At the ſame time, care muſt be taken to maintain the vital principle, in order that its activity may be ſupported in ſuch a degree as may be ſufficient for reſtoring the deranged equilibrium of the organiſm.

The phyſician muſt conſider in a quite different manner the SECOND PERIOD * of diſeaſe, when ſome injury in the organic parts manifeſts itſelf; when crudities are collected in the ſtomach, or foreign matters, which by their pernicious ſtimulating quality attack the organic parts. This accumulation of noxious matter is the conſequence of deficient energy of the vital principle; of inſufficient activity in the buſineſs of excretion and ſecretion. In this caſe it is particularly neceſſary to remove the foreign matter, which nouriſhes the diſeaſe, and prevents the free action of the vital principle on the organization.

In removing theſe pernicious ſtimulants we muſt attend to the degree of aſthenia, and conſequently to the efficacy of the vital principle; otherwiſe the body may be ſtill more weakened by inceſſant evacuation; the activity of the vital principle may be too much leſſened,

* I muſt requeſt the reader not to forget the diviſion of the uſual progreſs of ſome diſeaſes of direct aſthenia, on which the above obſervations are founded. 1. Beginning or commencement of the diſeaſe. 2. Formation of the diſeaſe. 3. Progreſs of the diſeaſe. In the laſt caſe, a ſtate of direct aſthenia takes place, which alters the method.

leſſened, and the buſineſs of ſecretion and excretion be thereby more and more deranged, ſo that theſe foreign matters may be more accumulated in the ſtomach; and, on the other hand, life ſtill decreaſe, till the ſoul at length is as it were expelled from the body by purging and bleeding.

But when there exiſts actual organic leſion, we cannot obtain our end if we endeavour to reſtore the deranged equilibrium merely by ſtimulants and exciting vital activity. Either the activity of the vital principle will be exalted in an immoderate and unnatural degree, and indirect debility be thereby effected, or the vital principle itſelf will be exhauſted before it can overcome the impediments which oppoſe its activity in the organs. The moſt dreadful ſpaſms, phrenitis, dropſy, metaſtaſes to the nobleſt parts, are the conſequences of this method. This is pouring oil into the fire.

There are, however, ſtates of the higheſt aſthenia, where we muſt not think of removing foreign matters which produce organic leſion of the parts, but where our whole care muſt be to guard againſt exhauſtion of the vital principle; yet even in this ſtate we muſt endeavour to keep the excretory and ſecretory ducts open, in order that nature may be impeded as little as poſſible in removing theſe matters. The tepid bath, in malignant nervous fevers, is exceedingly proper for this purpoſe.

This method muſt be followed in ſlow tedious diſeaſes, where the vital principle is much weakened, and where no proper evacuants can be employed.

§ 427.

§ 427.

In order to accompliſh both objects, to maintain vital activity, and remove organic leſion, the two methods muſt be combined, but great caution will be neceſſary, that we may not fall into a pernicious contradiction in practice; that is to ſay, that we may not again corrupt by debilitating, what we have improved by ſtrengthening means. We muſt alſo not employ means of one kind in ſuch a degree, as to counteract the effect of another kind. But there are many diſeaſed ſtates, in which the phyſician is at a loſs what indication to follow. An inflammatory prediſpoſition may exiſt where there is great weakneſs of the vital principle. In ſuch caſes the greateſt phyſicians have combined ſtrengthening means with thoſe that prevent inflammation; bleeding muſt not be employed, and cooling drinks muſt be uſed. Pain, ſpaſms, gangrene in the membranaceous parts, may be cured by opium combined with peruvian bark or alcahol, provided there be no violent fever*. For the ſame purpoſe opium is combined with wine.

It is of great importance to change the ſtrengthening means for gentle evacuants, and when the latter are employed to uſe a more nouriſhing diet. In malignant nervous fevers, with a gaſtric and phlogiſtic prediſpoſition, I have given in the forenoon, during the intervals, gentle reſolvents, and in the afternoon cinchona, or, according to circumſtances, mineral acid. I am well aware that theoretic phyſicians will cenſure this method; and indeed I would not recommend it in a high degree of direct aſthenia. Practical obſervation, however, is in its favour. There

* Frank *de Curand hom. morb.* I. 26.

are ſome periods when this alternate proceſs is the only thing that can ſave the patient's life; on the other hand, in ſuch caſes, the ſtimulating ſtrengthening method applied unconditionally, without regard to remote cauſes, would occaſion all thoſe evils before mentioned. How then can thoſe means which promote the laſt object be called actually debilirating? are they not much rather indirect ſtrengthening means? (§ 209).

§ 428.

In the uſe of theſe ſo called debilitating means, we muſt take as much care as poſſible that none of the principal vital organs be too much weakened, by which the organization would ſuffer in general. Strong evacuants, therefore, in aſthenic diſeaſes, beſides the general injury which they occaſion to the whole conſtitution, are exceedingly pernicious, becauſe they injure the bowels mechanically. The ſame injury ariſes from an abuſe of injections, by which the vital ſuſceptibility of organic parts will be deſtroyed.

If any diſeaſe belongs to the aſthenic claſs, it is the puerperal fever; and if we read what Vogel, Stoll, and Burſerius have ſaid on the mode of treating this fever, we ſhall ſee the injury which ariſes, according to all experience, from omitting the evacuants indicated; but in this reſpect great attention muſt be paid to the powers: *Quo major contagii viriumque ſucceſſu morbi proſtraturum eſt ratio, eo magis timeatur oportet ne incauto purgantium uſu, quod reliquium eſt vitæ evacuationibus expellatur*, ſays Frank.

§ 429.

We have here before us immoderate irritability, and

and to leſſen it we employ STRONGER STIMULANTS (§ 317). which when applied in a preponderating degree become real ſedatives. On this depends the application of opium in ſpaſmodic affections; for though opium is a ſtimulant, it acts againſt the exiſting irritability in a proportional degree as a ſedative. Other ſtimulants, raiſed to doſes equally ſtrong, produce the ſame effect: thus wine, in an immoderate quantity, acts as a narcotic, and weak ſtimulants applied in the like manner, in greater quantity, will have the ſame effect. People may get drunk even with beer. Opium, therefore, as well as other things of the ſame kind, in ſmall doſes, increaſe irritability, but in greater they overcome and ſuppreſs it, and in ſtill greater they deſtroy it entirely. Every thing depends on the practical acuteneſs of the phyſician, by which he is enabled to aſcertain the exiſting quantity of the vital principle, and the ſtate of the organization. To this head belongs the treatment of real nervous fever. This great irritability ſhews itſelf by an exceedly weak, almoſt imperceptible pulſe, raving, drowſineſs, coldneſs of the extremities, &c. The ſtrongeſt wine, opium in large doſes, and muſk, are in this caſe the means of cure.

In employing theſe means, care muſt be taken to diſtinguiſh inflammatory prediſpoſition from irritability, as ſhall be mentioned hereafter, elſe with theſe ſtimulating ſedative means we ſhould occaſion the greateſt miſchief.

We muſt diſtinguiſh alſo the effect of ſtimulants, which of themſelves, and in ſmall doſes, exert a ſedative action, from thoſe which when uſed immediately in conſiderable portions, have a ſtupifying effect,

as

as ſpirituous liquors. Opium poſſeſſes of itſelf ſo high a ſtimulating property, that even in proportionally ſmall doſes it ſuppreſſes irritability by its counter-excitement. It may be employed, therefore, with much more certainty than theſe ſpirituous means.

In uſing this method we muſt not forget the STATE OF THE ORGANIZATION, and attend merely to the vital principle. The application of it is dangerous, when any injury or inflammation exiſts in organic parts. By inattention to this caution we ſhould increaſe the injury; at length annihilate theſe parts, and make them unfit for being acted upon by the vital principle.

Long before BROWN opium was employed for leſſening irritability. FOURNIER uſed it, with great benefit, in hectic fevers, and it is recommended by VOGEL.* BROWN, by his *opium me hercle non ſedat!* has given us another explanation of its mode of action, which however his ſervile imitator carries too far.

§ 430.

Some have proceeded ſo far as to imagine that they can accompliſh their object by ſuppreſſing irritability in all caſes, by means of counter-ſtimulants, whether leſion of organic parts, inflammation, accumulation of gaſtric impurities exiſt or not; and that theſe ſtimulating narcotic means may be ſubſtituted with advantage for the antigaſtric and antiphlogiſtic. They are employed, therefore, unconditionally in all caſes, and fevers are checked, and poiſons ſuppreſſed, &c. without any regard to the conſequences. Theſe people certainly place great confidence in the power of

* Handbuck II. p. 187. &c. alſo Frank *de Cur. hom. morb.* II. 71.

nature!

nature! In how extraordinary a manner this new method is ſaid to act, will appear from the following caſe, of which the Brunonians are proud. It is indeed very remarkable, but not in regard to that on account of which it is produced.

A woman, ſixty-two years of age, having ate poiſonous muſhrooms, experienced all the effects of a narcotic poiſon: inſenſibility and apoplexy, cold of the extremities, &c. About forty grains of emetic wine had been adminiſtered, but as this produced very little effect, ſhe took ſpirit of ammonia in water, and threw up once without any relief. At laſt, a mixture of half an ounce of *laudanum liquidum*, with ſix ounces of peppermint water, being given to her in the quantity of a large tea ſpoonful every quarter of an hour, an abundant diſcharge was the conſequence; the ſtupefaction decreaſed, and ſhe was ſoon perfectly cured*

It may be here readily ſeen that it was not the opium alone which performed the wonder; it only leſſened the immoderate irritability, which oppoſed the effect of the emetic; yet the application of the emetic was neceſſary to expel the poiſon. The uſe of opium, in this caſe, deſerves full approbation. Let the reader compare this with the ſimilar application of it in the like caſes; as for example, lethargy. Hahneman long ago recommended ſtrong coffee, as the beſt antidote againſt narcotic vegetable poiſons. But this obſervation by no means ſets aſide the neceſſity of expelling the poiſon by evacuants; both indications muſt be combined. The application of opiates and medicines which have a like action, removes only fit-

* Erklänung der Browniſchen Arzneilehre von Joſeph Frank. Heilbron, 1797.

neſs

neſs for receiving the poiſon, and leſſens the activity of the abſorbing veſſels, but as long as the poiſon remains in the body, they can act only for a certain period; and we employ that time to free the body from the poiſon, and then recur to emetics, &c.

§ 431.

Exceſs of irritability may be leſſened with great certainty by the uſe of emollients and lenitives. This method is particularly proper when the organic parts have ſuffered, in order that the violent excitement which ariſes by the organic leſion may be weakened. The application of them is attended with the more certainty as they do not, like evacuants, immediately exhauſt the power of action in the organization, but rather ſtrengthen and maintain it. On the other hand, they have great advantage over the ſtimulating, ſtupefying medicines, which, by continued application, weaken the power of action, and impede the neceſſary evacuation of foreign matters. In the caſe of direct aſthenia, they muſt be combined with the ſo called narcotics or cinchona, &c. according to circumſtances; ſometimes they will ſerve alſo to theſe ſtimulating means as vehicles.

We muſt, however, carefully diſtinguiſh fat, glutinous, obſtructive things; for example, fat ſoups, farinaceous food, from thoſe which are merely ſoftening and emollient, among which are mucilages. The method of curing dirarhœa, will ſerve as the beſt illuſtration of this remark. If it be only commencing and mere looſeneſs, opiates and ſpirituous means are ſufficient; if it be gaſtric, moderate evacuation, and particularly emetics, which ſpeedily carry off the crudities,

dities, will be of great ſervice; only theſe medicines muſt have no acrid ſtimulating qualities, by which the organic parts would be injured. In the laſt place, if leſion of the organic parts or inflammation already exiſt, medicines which counteract inflammation muſt be employed; if leſion exiſts in a higher degree, lenitives are required, which may be ſeconded by combining them with opiates. In theſe few words are comprehended all the different kinds of flux, and the proper methods of cure. Thoſe who keep in view theſe obſervations, will be able to reconcile the many contradictions of the phyſicians reſpecting this diſeaſe, and alſo to underſtand the true mode of treating the malady.

The emollients may, with great propriety, be added to aperients and cathartics; the former moderate the ſtimulating quality of the latter, without counteracting them, and rather promote the neceſſary evacuation of pernicious matter; they leſſen irritability, and check immoderate evacuation. Lenitives do not obſtruct, but carry off in a gentler manner.

Another kind of emollients are uſed in caſes where there are tenſion of the fibres, indurations and obſtructions; as for example, vapour baths, the warm bath, tepid liquors. Theſe emollients deſerve to be more particularly conſidered hereafter.

§ 432.

The INFLAMMATORY PREDISPOSITION muſt not be overlooked. It takes place in the higheſt aſthenia, and is the conſequence of leſion produced in the organic parts by irritation. By organic parts, we here underſtand the animated organization. Stimulants, whether

whether they act outwardly or internally, occasion such changes in the organic parts, derangement of their admixture and cohesion, that the substance of the parts itself is attacked, and pain and redness ensue. A higher degree of this lesion is suppuration and gangrene, mechanical destruction of the bodily mass; whereas inflammation is merely a deviation from the natural state of the organic component parts.

To remove the inflammation, we must employ the antiphlogistic method, the application of which, however, requires an accurate knowledge of the different states. Asthenia makes a counter-indication against the use of anti-inflammatory means; but does not reject it entirely: it may be admitted, conditionally, in a high degree of feebleness. But in this case we must endeavour to combine the anti-inflammatory means with strengthening means. It is here that opiates, and other things which lessen irritability, have an artificial action. This is proved by the use of opiates in asthenic inflammation of the eyes. May we venture, therefore, from analogy, to draw a like conclusion in regard to the treatment of internal asthenic inflammation?* Of the strengthening means, those are to be chosen which are least endowed with a stimulating property.

There are inflammations of an inferior kind, which by remedies that produce a derivation exciting greater vital activity, are removed from individual organs; but when the organic parts are injured in a high degree, the inflammation by the use of stimulants is increased.

BROWN speaks of STHENIC and ASTHENIC inflam-

* See Frank *de Curand hom. morb.* II. 26.

mations,

mations, and recommends againſt the former the antiphlogiſtic method in its full extent, and for the latter ſtimulants, in order that by exciting greater activity in the ſyſtem, and conſequently a ſtronger motion of the blood, we may effect the diſperſion of congeſtions. By the firſt kind he probably meant actual, violent inflammations, where the leſion of the organic parts, the ſolids and fluids, is already conſiderable; but under the latter a very inferior degree, or rather a commencing inflammation, where the organic parts have not much ſuffered. Perhaps he diſtinguiſhed alſo, by the above diviſion, thoſe ſtates where the inflammation muſt be brought to ſuppurate by ſtimulants, and that where the inflammation can ſtill be diſſipated. This we obſerve in a very evident manner in inflammation of external parts.

The diſſipating method, or ſpeedy leſſening inflammation by means of derivation, is commonly employed in the firſt ſtage, before the inflammation begins to ſuppurate; but as ſoon as an inclination to ſuppuration is obſerved, it muſt be promoted by ſtimulants. The firſt mode of treatment is indeed far more certain; but it can be employed only in the commencement. The other, which we have ſeen adopted with the beſt conſequences for ulcers, we ſhould apply to the cure of internal inflammation, only it is here too difficult to aſcertain the degree of the malady; it is alſo exceedingly difficult to determine the proportion between the inflammation, and the degree of the ſtimulant to be applied. Should we be able to acquire a more accurate knowledge in this reſpect, we ſhould have an excellent mode of cure for the firſt ſtage of pulmonary conſumption.

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The principal point in the anti-inflammatory method is to remove all external ſtimulants, and every thing heating. In no diſeaſe is reſt more neceſſary; and that alone can remove the evil, eſpecially when combined with light food not too nutritive, but at the ſame time not too debilitating. What are called medicines, in the ſtrict ſenſe of the word, muſt be employed with great caution, not to increaſe the excitement.

The diſtinction between GENERAL and LOCAL inflammation, is of great importance. Under the former, we underſtand, a general inflammatory diatheſis, *(diatheſis phlogiſtica)* a general change in the relation of the organic parts, combined with general irritability. By local inflamation, we mean derangement of individual organs, effected in the like manner. Each of theſe two kinds of inflammation requires a different mode of treatment; the firſt general, anti-inflammatory means, bleeding; the ſecond, topical means, applied immediately to the ſuffering part.

§ 433.

Exceſſive irritability may exiſt alſo in individual organs, and requires therefore local treatment; for example, inflammation in the bowels, inflammation of the brain, ſquinancy, inflammation of the ſtomach. Theſe local inflammations, however, are only the conſequences of immoderate irritability in individual organs. This immoderate irritability in individual organs may exiſt with leſion of the organs, as in ſpaſmodic affections. But, in general, local muſt be combined with general treatment. In common we ſucceed better in removing local evils of this kind,

than

than in removing thoſe which are general, eſpecially when they affect organs which have little connection with the reſt.

§ 434.

The local application of means for leſſening irritability, deſerves our particular attention. By increaſing or leſſening the irritability of individual organs, we produce a more uniform diſtribution of the vital principle, the beſt means for leſſening its immoderate activity. Thus we cure inflammation of internal parts, by ſtimulants applied to the external; for example, veſicatories applied to the breaſt in inflammation of the ſtomach, and alſo applied externally in inflammation of the throat. Thus we draw off inflammation of the brain by veſicatories applied to the ſoles of the feet. But by leſſening the irritability in other organs, correſponding to the affected organ, we leſſen the irritability in the latter. Local bleeding, vapour baths, fomentations, act in this manner; but to produce a local increaſe of irritability, veſicatories, electricity, friction with ſome volatile ſpirit, &c.

§ 435.

The means for leſſening immoderate irritability muſt be employed only in that degree which is ſufficient for carrying off the exceſs. If too long continued they produce relaxation, ſoftneſs, and debility; injure the organization, and leſſen the vital activity, by which the functions of the body are confined, and obſtructions, congeſtions, and accumulations of the juices in individual parts, hebetude of ſenſation, and

cachexies are occaſioned. Individual organs alſo in the local application of this method are injured in the like manner. Thus relaxation of the bowels, and inactivity of their functions, are produced by warm liquors, or the improper uſe of purgatives.

CHAPTER IV.

ON SOME OF THE MEANS TO BE EMPLOYED FOR MAINTAINING FEEBLE LIFE.

§ 436.

EVERY thing that favours the prolongation of life ſerves to maintain it in the aſthenic ſtate, but only in regard to aſthenia. To exalt the efficacy of the vital principle, or leſſen it to a certain degree; to maintain it in this ſtate, and to guard againſt conſumption of the animated organization, are the principal indications in the uſe of the means for maintaining feeble life, a few of which we ſhall here conſider.

HEAT.

§ 437.

Heat, according to BROWN, is the mean point of external temperature, between cold and burning heat (*ardor.*) Conſequently cold and heat are only the two extreme degrees of heat.

The ſtrengthening power of warmth has already been ſhewn in the courſe of this work; it preſerves a mean moderate degree of irritation, whereas cold and heat debilitate. (§ 35.)

Warmth is the firſt thing that promotes the expanſion of life in its origin; it is alſo that which maintains its continuance; it promotes and ſupports the

activity of the vital principle, and prevents the decompoſition and ſolution of the component parts of the organization: it is the immediate companion of all life, all motion and activity.

But to be ſenſible of the real utility of warmth, and to avoid many miſconceptions, we muſt take into conſideration the different modifications of heat, in regard to the ſtate of the vital principle and the organization. The more active the vital principle, the more ſolid and the more equally mixed are the component parts of the organization, and the more lively is the internal natural warmth of the body. If the activity of the vital principle is too great, warmth exiſts in a greater degree even to heat. This degree proceeds ſtill farther, when by too great activity of the vital principle the organic parts are injured, as is the caſe in the inflammatory prediſpoſition. (§ 432.) Hence the febrile heat. If this organic derangement be carried ſtill farther, the conſequence is gangrene; a ſtate in which the organic parts are hurt in ſuch a degree that they loſe their ſuſceptibility for the vital principle, and this at laſt ends in mortification *(ſphacelus)* the death of organic parts. In this ſtate the influence of the vital principle is entirely withdrawn, and a chemical decompoſition of the organic parts has taken place.

Theſe phenomena, the conſequences of immoderate activity of the vital principle, we obſerve alſo in individual organs. An individual organ may be feveriſh, inflamed, gangrened, &c. When this ſtate of unnaturally increaſed warmth is a conſequence of irritability generally exalted, or of immoderate activity of the vital principle in general, it is ſhewn by the

external temperature of the body. This is particularly the caſe when the unnatural activity is communicated to the organ of the ſkin. Thus we obſerve an excluſive increaſed warmth in individual parts of the body; for example, in the head, in the palm of the hand. But when the organ of the ſkin is not affected by this unnatural activity, though it may exiſt in the internal organs, inſtead of obſerving increaſed warmth in the external parts of the body, we ſometimes find benumbing cold, while the patient is tormented with internal heat, and cannot quench his thirſt.

§ 438.

External warmth acts, therefore, on the body according to the degree of the activity of the vital principle, and the ſtate of the organization. By this we may ſee the difference between the action of warmth on a dead and on a living body; when this activity exiſts in a conſiderable degree, the natural warmth is greater. If no unnatural ſtate exiſts, an increaſed temperature of the body will be obſerved externally.

This internal activity of the vital principle is proportioned to the action of external warmth, conſequently where the activity of the vital principle is freer, we find it in a higher degree, and where the vital principle is fixed, in a lower. Hence it appears what bodies can beſt endure the external heat of ſummer, or the cold of winter. According as the vital activity is exalted or depreſſed, ſo is alſo the internal warmth. Hence the difference of the temperature of the body in diſeaſes, and at different periods of life. Hence the febrile heat, the greater warmth in the period of childhood, and the decreaſing warmth in old perſons.

If the action of the vital principle is in part removed, and if that ſtate which we called gangrene has taken place, a commencing colliquation and decompoſition of the organic component parts, there ariſes a highly increaſed external warmth, but apparently of different degrees, in oppoſition to the NATURAL warmth.

§ 439.

By a more delicate ſenſation and diligent obſervation we can determine, from the nature of the external temperature, the ſtate of the internal organization. The ſenſation of external warmth in fevers is totally different from that of the natural ſtate, and in inflammation from that in gangrene. Sufficient obſervations are ſtill wanting to this part of ſemeiotic, in order that we may be enabled, by more accurately determining the external temperature of the body, to form concluſions reſpecting the ſtate of the internal organization. By longer practice, to give more delicacy to our ſenſation, and perhaps alſo by proper inſtruments, theſe obſervations may be brought to greater perfection.

§ 440.

The application of external warmth ought to be proportioned to the temperature of the body. This is a golden rule for maintaining feeble life. It ſhould be only a few degrees higher than the temperature of the body, and be gradually increaſed according as the natural warmth of the body increaſes. If too ſmall a degree of external warmth be applied, it will not be ſufficient to maintain the activity of the vital principle,

and

and conſequently to maintain and increaſe the internal warmth; by cold it would be leſſened ſtill more, or totally ſuppreſſed. If a higher degree of warmth than the natural temperature of the body be applied, the activity of the vital principle will be immoderately exalted, but the organic parts will by theſe means be deranged. Frozen limbs, if brought near the fire, mortify with a high degree of heat. This mortification ſoon takes place, ſo that the limb is totally deprived of ſenſation.

§ 441.

When we endeavour by external calefacients to excite the internal warmth of the body, we employ, at the ſame time, certain auxiliary means to effect a general diffuſion of it throughout the whole organization, from the interior towards the ſurface. Friction ſerves for this purpoſe, and internal calefacients conveyed into the body. Both theſe modes of application muſt mutually ſupport each other. A great deal depends on the external temperature of the body; and hence the great influence of the ſtate of the atmoſphere. The nature of the heat by which we are ſurrounded, and the matters with which it is combined, are of no leſs importance; whether the air contains more oxygen or azote, and whether the calefacients are rendered more poignant by the admixture of ſtimulating component parts. In the laſt caſe, they are more efficacious; as for example, burnt wine. Warm baths are ſtrengthened by the addition of aromatic herbs.

§ 442.

When the internal warmth is exceedingly weak, a ſmaller degree of external warmth muſt be employed. In caſes of frozen limbs, what we call cold is a corroborant, provided the decreaſe in the temperature of the external warmth of the body ariſes merely from the vital activity being oppreſſed, while the vital principle exiſts in ſufficient quantity. But if this deficiency of natural warmth be the conſequence of an actual deficiency of the vital principle, heat, particularly on account of its ſtimulating quality, is employed for exciting and maintaining vital activity. Old people, therefore, require a far higher degree of external warmth than that of the temperature of their body, and for this reaſon, they can endure heat better than young perſons; care, however, muſt be taken to make a diſtinction between theſe two ſtates; that where the vital principle exiſts in ſufficient quantity, and that where it is deficient. The general rule: that the application of heat is to be proportioned to the temperature of the body, holds good when the vital principle is only confined, as in many diſeaſes.

§ 443.

Heat has a ſtimulating as well as ſtrengthening property: by the former the activity of the vital principle is excited and increaſed; by the latter it is maintained. If it is to be applied, in particular, as a ſtimulant, it muſt be uſed in a higher degree, and only for a SHORT TIME, becauſe in this degree it would otherwiſe relax and ſoften, or even injure the organic parts.

But

But to uſe the ſtrengthening property of heat, a mean degree is requiſite, and continually applied.

§ 444.

The continued application of heat is indiſpenſably neceſſary for maintaining feeble life, in order that the requiſite activity of the vital principle may not be depreſſed. The greater the aſthenia, the more neceſſary it is to maintain heat; becauſe, if the calefacients be intermitted, there will be reaſon to apprehend the increaſe of the debility, or the total extinction of life. By heat alone we can retard theſe, or at any rate the total loſs of irritability.

At the commencement of life, in the embryo ſtate, continued warmth is neceſſary in the mother's body to make the child expand and promote its conformation. On man's firſt entrance into the world, continued external warmth is neceſſary to maintain the activity of feeble life; and the weaker this life, the greater is the degree of external warmth (not heat) which will be required, to prevent the total extinction of life. New born children, whoſe conformation is imperfect, muſt therefore be kept warmer, and hence catching cold after birth is ſo pernicious.

The neceſſity of the uninterrupted application of heat we obſerve alſo in caſes of apparent death.

In the continued application of calefacients, the degree of heat muſt be accurately adjuſted, in order that we may not occaſion relaxation, ſoftening and immoderate debility. Attention muſt always be paid to the nature of the organization: if the ſolids are relaxed, or if the organic component parts are not ſufficiently connected, the calefacients, eſpecially when employed

in

in a ſtrong degree, muſt not be too long continued; but this will not be the caſe where the fibres are ſolid and ſtiff. In the firſt caſe, we muſt leſſen the degree of the warmth, and immediately apply ſtrengthening means to ſupport the vital principle, and prevent the component parts from being ſeparated; but we muſt endeavour, in all caſes, to aſſiſt the action of the external calefacients, by promoting the expanſion of internal warmth.

§ 445.

One might eaſily be led into the error of ſuppoſing that heat ought not to be employed internally and externally as the means of promoting warmth, in order to maintain feeble life, becauſe this recommendation of it is in direct contradiction to the aſſertion of very reſpectable phyſicians, that cold is the greateſt corroborant: but it ought to be remembered that the heat is employed in a degree proportioned to the ſtate of the organization; that cold is only a leſs degree of warmth; that warmth applied externally in this low degree conducts off the exceſs of the internal heat, which is the conſequence of too great activity of the vital principle, and that it therefore acts as a corroborant but negatively, as this ſmall quantity of it is in itſelf debilitating. Cold, on the other hand, weakens where there is a deficiency of internal heat (we muſt here except the ſudden application of cold as a ſtimulant); and in this caſe a higher degree of warmth is neceſſary to maintain the requiſite activity of the vital principle. In both caſes, the deranged equilibrium is reſtored by the effect of warmth, either by its conducting off the

exceſs

exceſs of heat in the body, or by conducting to it more heat when there is a deficiency.

§ 446.

We ſhall now ſpeak of the means for calling forth the internal heat, and diſtinguiſh them from the calefacients, properly ſo called. They are, in particular, thoſe by which the impediments to the free activity of the vital principle are removed, or by which the activity itſelf is excited.

It often happens, that if the impediments only are removed, the internal heat will gradually diffuſe itſelf in an uniform manner throughout the whole body. In caſes, however, where the activity of the vital principle is too much confined, where, in particular, the organs have conſiderably ſuffered, and where their fitneſs for being acted upon by the vital principle is greatly leſſened, the application of ſtimulants is immediately neceſſary to put the activity of the vital principle in full play. This may be illuſtrated by the example of a higher or lower degree of apparent death *.

Reſt alone is often ſufficient to call forth the internal heat, as it tends leſs to weaken the powers, and produces leſs ſtimulation; ſo that the expanſive function of life is carried on with leſs interruption. There is more reparation than loſs. Thus, during ſleep, we reſume our ſtrength, and by this daily leſſening of external excitement, an uniform diſtribution of the vital principle is again effected. Nothing, therefore, is more prejudicial to the expanſion of our powers, to

* See the Author's *Verſuch: Kunſt Scheintodte zu beleben.* Hanover, 1797. p. 56.

to the growth and good ſtate of the body, than immoderate exerciſe and labour. Every morning we find ourſelves ſtrengthened; our pulſe beats regularly; the natural warmth of the body is moderated, and at the ſame time diffuſed; whereas in the evening, the daily evening fever takes place, and the warmth of the body is more or leſs accumulated in individual parts. The greater the aſthenia, the more reſt is neceſſary to prevent conſumption of the powers.

In applying ſtimulants, we muſt be careful not to employ them in ſuch a degree as to deſtroy the neceſſary reſt.

The external application of heat, at a moderate temperature, ſerves of itſelf to call forth the internal warmth of the body, as by exerciſing a ſtimulating action immediately on the organ of the ſkin, it promotes more lively excretion and ſecretion, by which means the equilibrium of organic nature is reſtored. Moderately warm air and the warm bath are the principal means for promoting this end.

§ 447.

One of the principal means for calling forth natural heat, is FRICTION. By the activity excited in the organ of the ſkin, the activity of life is animated in the organization in general; the conſequence of which is, increaſed motion of the blood and all the juices, exalted activity of excretion and ſecretion, greater irritability of the nerves. This revolution in the body may, however, be attended with prejudicial conſequences, if the friction be not applied with a careful attention to the ſtate of the vital principle. If the vital principle is confined in a great degree, ſo that

ſuſceptibility

ſuſceptibility of irritation ſeems to be deſtroyed, as in apparent death, the friction muſt be applied with great moderation *. Too ſtrong friction increaſes the accumulation of the blood in the right ſide of the heart, by which the expanſion of vital activity is rather impeded. But when re-action is perceptible, ſtronger friction may be admitted. When the accumulation of blood towards the left ſide of the heart is not ſo great, and when contraction of the heart is obſerved, briſker friction may be employed. But during this operation, attention muſt always be paid to the imperfect, and ſtill oppreſſed vital activity. As long as life is feeble, too violent friction would be attended with the prejudicial conſequences above mentioned.

During the application of friction, attention muſt be paid alſo to the ſtate of the organization. A body, the organic parts of which are in ſtrong coheſion, and in which the fibres have great ſolidity and extenſibleneſs, will admit of ſtronger friction, than one where the fibres are ſoft and brittle, and where the admixture of the organic parts is ſuch that they can be eaſily ſeparated. In the laſt caſe, too violent friction will promote derangement of the ſolids, and the ſeparation and ſolution of the fluids. Hence it happens, that in malignant fevers, the epidermis is eaſily injured.

To maintain, in a permanent ſtate, the activity of the vital principle, and the expanſion of natural heat, the friction muſt be continued. If life be exceedingly weak, to interrupt this operation would be highly dangerous. During this continuance, the friction muſt be increaſed or leſſened, according to the obſerved

* Coleman's Abhandlung über durch ertrinken, erdroſſeln, erſticken gehemmte athemholen. Leipſic, 1793.

ſerved ſtate of the vital activity, and of the temperature of the heat of the body.

A counter-indication to friction is too great irritability. When it exiſts, however, chiefly in individual organs, friction applied to a remote part of the body, will tend to promote a derivation, and to leſſen the irritability.

It will be of great advantage to combine friction with other ſtimulants. The friction may be performed with cloths dipped in ſpirituous liquids; and animating means, or external ſtimulants, ſuch as electricity, embrocation, &c. may be employed along with it. Friction is particularly ſerviceable in conjunction with the tepid bath; as the former by its action tends, in an eminent degree, to produce a uniform diſtribution of the natural heat, while the latter reſtores irritability. What a noble coalition of corroborants and ſtimulants!

Friction has always been conſidered as of ſervice to promote perſpiration and free evacuation; and no better auxiliary means have been found for weakneſs of the lower belly, relaxation of the bowels, and rheumatic obſtructions.

§ 448.

Another means of calling forth natural heat is MODERATE EXERCISE. Motion is an excellent promoter of health, even when employed by the weakeſt people; and if we cannot procure active motion for them, we ought at leaſt to procure ſome of a paſſive kind. This motion muſt be proportioned to the powers, that it may not produce ſtraining and exhauſtion.

hauſtion. Under the term motion we underſtand, in the moſt extenſive ſenſe, all thoſe things by which we can effect a certain increaſe of activity in the organs of motion.

§ 449.

All ſtimulants, internal as well as external, which excite an increaſed activity of the vital principle, or which have a peculiar action on individual organs, promote the expanſion of internal heat. To this head belong ſpirituous aromatic nouriſhment, medicines, which have an immediate action on the ſtomach, and vital air inhaled into the lungs: external ſtimulants are veſicatories, cauſtics, whipping with nettles, &c. applied immediately to the organ of the ſkin.

§ 450.

Sudden changes of different ſtimulants may be employed alſo to call forth the natural heat; for example, the alternate application of external cold and heat, variety of food, &c.

§ 451.

Increaſing or leſſening the action of ſtimulants, above or below the degree before employed, tends to promote the ſame object. Thus the ſudden application of cold excites internal warmth; the cold bath excites afterwards increaſed perſpiration. A powerful draught of ſpirituous liquor, taken at once, excites a greater warmth than the ſame quantity given in ſmall portions by degrees.

§ 452.

§ 452.

It now remains to take into conſideration the particular kinds of calefacients. By theſe we accompliſh our object in proportion to the exiſting ſuſceptibility of irritation.

(a) EXTERNAL CALEFACIENTS.

§ 453.

THE TEPID BATH claims here the firſt place. It is ſtimulating, ſtrengthening, moderately active, and may be applied with moſt advantage where there is real debility. It is, however, peculiarly uſeful where there is more tenſion of the fibres, with ſufficient coheſion, and an uniform admixture of the organic parts, but where there is a deficiency of ſuſceptibility of irritation from the action of external ſtimulants, and where in general the organic parts themſelves have in a conſiderable degree been injured. Hence the beneficial effect of the warm bath on children, in whom there is a deficiency of the power of action, with an exceſs of irritability. Hence alſo its good effect in nervous fevers. The warm bath, on account of its ſtimulating power, tends to diſperſe obſtructions and congeſtions, and by its general activity, and perhaps its mechanical preſſure on the ſurface of the body, to promote an uniform diſtribution of the juices; but it manifeſts its action, in particular, immediately on the organ of the ſkin, by reſtoring the functions of excretion and ſecretion: at the ſame time, it is the beſt means for purifying the ſkin.

The ancients aſcribed the national debility of the Romans, in the periods of their decline, to the uſe of the

the warm bath. But the Romans employed chiefly the hot bath, which by immoderate uſe produces great relaxation of the ſolids, and renders the body delicate.

On the other hand, leſion of the organic parts appears to me to be a counter-indication to the warm bath. Where an actual ſeparation of the organic admixture has taken place, where the ſolids have loſt their coheſion, where great relaxation of the fibres, and commencing ſolution of the juices exiſt, the tepid bath would render this ſtate worſe: it would increaſe the relaxation, promote the ſeparation of the organic admixture, and thus haſten decompoſition of the organization.

This diſtinction is of importance; and we thence ſee why the warm bath in putrid fever is improper; why in the latter caſe the ſudden application of cold ſerves as a ſtimulant, and why in moſt kinds of ſwelling wet is ſo much dreaded, becauſe it increaſes watery accumulations.

If we follow our own natural ſenſation, we ſhall ſoon be enabled to know whether the warm or the cold bath is proper for us. The debilitated patient ſeeks the former; but the debility muſt not have proceeded ſo far, that the organic component parts are conſiderably injured. In the before mentioned caſe of actual putrid fever, of the higheſt aſthenia, weak action of the vital principle, and leſion of the organization, continued cold, or the cold bath, can as little be applied as the warm bath, and for the ſame reaſon, as it would totally ſuppreſs the weak activity of the vital principle. The ſudden ſtimulating application of cold can here only be of uſe, and therefore Lettſom ex-

poſed his patients, attacked by putrid fever, to the cold in winter, and hence the beneficial effect of Theden's cold fomentation. But this can be no proof of the poſitive ſtrengthening power of cold.

Beſides its power to leſſen irritation, the tepid bath, on account of the chemical animating component parts of the water, and the oxygen which is abſorbed and communicated to the juices of the body, has a direct ſtrengthening action.

From the beneficial effect of the bath, as the means of purifying the ſkin, and leſſening the tenſion of the fibres, the generality of its effect on the ſurface of the body, and the vivifying power of the oxygen of the water, we may account for that exhilarating, agreeable ſenſation, which is experienced after the uſe of the tepid bath.

The tepid bath may be made ſtill more efficacious by the addition of ſtrengthening or ſtimulating medicines. It is a great advantage, in this mode of application, that the corroborants can be immediately introduced into the body, without putting the power of digeſtion into unnatural activity, and without increaſing, in an immoderate degree, the motion of the blood, by violent excitement of the ſkin. In the moſt obſtinate diſeaſes of the lymphatic ſyſtem, where there is a high degree of debility; where we muſt guard againſt all violent irritation, and avoid every thing that might put the functions into too great activity, and where the ſyſtem of digeſtion is particularly affected, this bath therefore is of the moſt important ſervice. In the period of childhood, when there is a high degree of irritability and atonia, in a ſtate of convaleſcence, in all diſeaſes which occaſion eruptions

tions on the organ of the ſkin, in congeſtions, obſtructions, and rigidity of the veſſels, and laſtly, in old age, to leſſen the tenſion of the fibres, to mitigate the dryneſs of the ſkin, to diſpel obſtructions, to bring into order, and produce an equilibrium in the irregular excretion and motion of the juices, to enliven the whole body in general, to refreſh and reanimate, and to increaſe on the one ſide the relaxed activity of the vital principle, and on the other, to guard againſt blunting the ſuſceptibility of irritation, and to prevent ſeparation of the organic admixture, the tepid bath is of great ſervice.

All theſe beneficial effects will be produced in a greater degree by the tepid bath, if medicinal component parts be combined with it. Aromatic herbs, ſoap, bran, cinchona, malt, &c. are, therefore, mixed with the water; ferruginous baths are alſo employed by uſing iron balls, or adding about two drams of vitriol of iron to each bath. Theſe different modes of application muſt be determined by the phyſician, according to the caſe, and we may here call to mind, what has been already ſaid reſpecting the ſtimulating ſtrengthening method. I muſt however remark, that the ferruginous bath, where there is a phlogiſtic prediſpoſition, or, in general, too great irritability, connected with an unnatural motion of the blood, or the accumulation of crudities in the primæ viæ, is counter-indicated.

§ 454.

Among the external means of exciting heat is the DRY BATH; covering the body with warm aſhes, with pure ſand heated over the fire, brandy lees, &c.

Theſe means have been employed with great advantage, to bring to life drowned perſons, but they ſhould not be delayed too long. They ought not to be our laſt reſource, and ought to be applied before all others, in order to call forth ſuſceptibility of irritation. Keeping in view the obſervations already made, in regard to the water bath, it is here to be remarked, that leſion of the organic parts makes a counter-indication. In caſe a high degree of irritability exiſts, the dry bath is improper; it poſſeſſes a ſufficiently calefactive property, but is not of the ſame mild and ſoftening nature as the water bath; on the other hand, where there is great relaxation and laxity in the fibres, and watery accumulations, it is to be preferred.

§ 455.

The VAPOUR BATH is calefactive, but at the ſame time highly relaxing, and by miſapplication, produces too great diſtenſion of the veſſels, and conſequently congeſtions; increaſes the determination of the juices towards the ſkin, and at laſt macerates the ſolids; on the other hand, where there is great rigidity of the fibres, and, in particular, too great brittleneſs and hardneſs of the ſolids, it may be of ſervice, and, therefore, is particularly well ſuited to the bodies of the Ruſſians. So far as theſe faults of the organic parts are impediments to an uniform diſtribution of the vital principle, and to its proper activity, the vapour bath may be admitted, even in aſthenia.

§ 456.

The application of the natural heat of the body

was

was long ago recommended as an excellent means for prolonging life. Boerhaave adviſed an old prince to place himſelf between two young females, and by following this preſcription, he obtained a reſpite for his life. This method was much employed formerly at Paris. Conſumptive people were adviſed to ſleep in the ſame bed with a ſound perſon. It is believed that, in this manner, ſtrengthening powers paſs from one body into another, as human heat is the moſt homogeneous to man. But beſides the danger of diſeaſes being communicated alſo in this manner, the ſound perſon always ſuffers, and ſometimes becomes conſumptive. We have the inſtance of an old infirm lady, who occaſioned the death of ſeveral of her maids, whom ſhe made to ſleep with her.

§ 457.

Animal heat. The beneficial advantage of applying freſh, newly killed animals to parts affected with pain, is well known. Heraclitus cured himſelf of the dropſy, by cauſing himſelf to be incloſed in the belly of a newly ſlaughtered ox*. An animal bath of this kind poſſeſſes great invigorating power. Oxen, therefore, among the rich, ought not to be ſpared, in order that this method, however ſingular it may ſeem, may be employed in caſes where there is a great degree of aſthenia, coldneſs of the extremities, and inactivity of the vital principle.

§ 458.

By warming the temperature of the air, we have ſtill another means for communicating heat to the

* See *Bacon de vita et morte.*

body. To determine the proper degree, a thermometer may be employed. In the application we must be guided by habit, and the state of the body.

(b) INTERNAL MEANS FOR PROMOTING WARMTH.

§ 459.

These are applied immediately to the internal parts; such for example as the stomach and the lungs. Among these are:

1. MEANS WHICH MERELY COMMUNICATE WARMTH; warm water, tea, &c.

2. MEANS WHICH BY THEIR STIMULATING POWER CALL FORTH WARMTH; spirituous liquors, medicines (sudorifics), spices. By these, activity in the organs is increased. By inhaling vital air, which increases the activity of the lungs, and consequently accelerates the circulation of the blood, the extrication of heat is promoted. Injections warm by stimulating the bowels.

§ 460.

Calefacients are applied locally, for heating and exciting the body in general, and in the diseased state, for producing the same effects in individual organs. In the first case, their object is not only to promote warmth, but also to stimulate. They are applied, in particular, to those organs which have the greatest consensus with the rest; and to this head belongs warming the region of the stomach and the back: also for the purpose of forming a derivation, in order to produce greater activity in individual organs. They are applied, in particular, to such parts of the body as are the first to lose their heat; such for example, as the

the feet; hence it is ſo neceſſary, that the feet ſhould be kept warm in old age.

Beſides the local application of means for calling forth heat, we muſt mention alſo calefacients. There are various methods of employing the latter: as warm fomentations, fomentations by means of cloths dipped in warm brandy or wine, warm bricks or tiles wrapped up in cloths, and applied to different parts of the body, moving a warming pan covered with flannel backwards and forwards, over the ſpine, laying a bladder filled with warm water on the pit of the ſtomach, &c.

§ 461.

Warmth, increaſed to a high degree of heat, acts as a ſtimulant. It may be applied with advantage where there is great inactivity of the vital principle, and deficient irritability; but rather locally, than generally, and only for a ſhort period, that it may not, at the ſame time, produce a relaxing and pernicious effect. But the greater the deficiency of the vital principle, the more cautious muſt we be in the application, leſt by too violent irritation, the ſmall ſtock of life ſhould be exhauſted entirely; as for example, in old age, where there is a deficiency in the coherence of the ſolids, and in the mixture of the fluids, and where the juices have a tendency to ſolution, it would be prejudicial; it would be no leſs hurtful where an exceeding low degree of heat has before exiſted, as in the caſe of perſons benumbed by cold. But even in caſes where theſe counter-indications did not exiſt, where the activity of the vital principle was rather oppreſſed, while the organic parts were not in-

jured, the ſudden application of heat has been attended with great effect. Thus in caſes of apparent death, embrocation with boiling water is recommended. In this manner, BIERNSTIEL ſaved patients who were quite benumbed and lamed, by pouring boiling water on their feet*. An important inſtance of this may be found in Hufeland's Neweſt Annals of French Medicine†. A woman ſixty years of age, attacked by a violent fever, had loſt all conſciouſneſs; her pulſe was weak and interrupted, her tongue was black, her lips were of a copper colour, the ſkin over her whole body had aſſumed a blueiſh tint, and was covered with a cold perſpiration, the inteſtinal canal was lamed, and the lower extremities were cold. She was made to ſwallow about a ſpoonful of ſtrong Spaniſh wine, and her whole body was covered with a number of ſcorching hot towels. This application was continued for ſeveral hours, and an injection with ſtrong emetic wine was adminiſtered. By theſe means the patient recovered heat, and was ſoon reſtored to the uſe of her ſenſes and of complete life.

§ 462.

The leſſening of heat to cold is applicable alſo in aſthenia, notwithſtanding its direct debilitating property. But we muſt make a diſtinction between its being ſuddenly applied as a ſtimulant, or uſed permanently. In the firſt caſe, when employed properly, it may be one of the ſtrongeſt of ſtimulants, and ſerve to render the impeded vital activity free, and to excite the natural heat of the body, and ought

* Die Sterblichkeit in dem Krankenhauſe zu Bruchſal. 1789.

† Vol. I. p. 314.

ought to be called an indirect corroborant. In the second case, when applied permanently, it debilitates as it becomes a stimulant lowered below that degree, in which heat is necessary for maintaining life. Hence the prejudicial effects of the cold bath to the debilitated.

Cold confines the activity of the vital principle, and if employed in too great a degree oppresses it entirely; at the same time it attacks the organic parts, excites the most violent contraction in the vessels of the skin, propels the blood from the external to the internal parts, and occasions obstructions of the juices, accumulations in individual organs, destroys the skin, makes it too brittle and hard, and consequently unfit for the business of absorption and excretion; but in actual sthenia, where there is real vital strength, or rather in hypersthenia, where there is excess of strength and of internal heat, cold is of service to lessen this superabundance. Applied to feeble persons, however, it weakens them still more; blunts susceptibility of irritation, or by its violent stimulus occasions immoderate tension, which is soon followed by greater debility.

The sudden application of cold as a stimulant is totally different; it may be employed in cases of debility, provided the sum of the vital principle is not so far lessened, that strong excitement would exhaust it entirely. Washing daily with cold water is, therefore, so beneficial to feeble children; but in this case a sponge dipped in cold water is to be drawn speedily over the body, which must be immediately dried. The suddenness with which the cold is applied makes it a stimulant; we must not, however, employ it till

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it exercise its debilitating powers, but endeavour to maintain the activity of the vital principle, which this stimulant has excited. Corroborants and calefacients must succeed; and the disengagement of natural heat may be promoted by friction, and by internal and external calefactive means, but it is particularly favoured by rest. Immediately after the application of embrocation with cold water, the body is to be rubbed, to be wrapped up in warm cloths, and then to be suffered for some time to remain at rest. Cold, when used as a stimulant, is to be applied in the like manner; for example, ice cold fomentations, &c. in typhus.

ELECTRICITY.

§ 463.

The study of this important remedy affords many noble prospects for the healing art. Much may be expected from its stimulating and strengthening action, in regard to the maintenance of feeble life, especially as the electric principle has so great an attachment to the vital principle, that it not only excites its activity, but even supplies it with pabulum. But however beneficial it may be when properly used, the misapplication of it is prejudicial. Violent electric shocks conducted through the principal vital organs injure the organic parts mechanically, and exhaust the vital principle.

(a) STIMULATING APPLICATION OF ELECTRICITY. It may be employed with advantage when irritability is lessened, and vital activity oppressed; but the effect will be more certain, when applied in a moderate degree, proportioned to the degree of confined vital activity.

Shocks

Shocks muſt be uſed with great caution. An exceedingly efficacious method is that of cauſing the electric fluid to paſs ſpeedily through individual parts of the body, by bringing the inſulated patient into connection with the negative or poſitive conductor, and then by means of a diſcharger brought into contact with the oppoſite conductor, drawing the electric matter from the body.

When electricity is to be applied in a ſtrong degree, it will be beſt to begin with a weaker.

In continuing the electric method of cure, the common mode is to ſtrengthen the electricity in a progreſſive manner, till at length there remains no degree from which any effect can be expected, as ſuſceptibility of irritation becomes always more and more blunted. This will be more the caſe if a very ſtrong degree of electricity has been employed at firſt. In continuing the cure, the method, however, muſt be changed: the ſtimulus muſt ſometimes be leſſened, and ſometimes increaſed, and it ought alſo to be ſometimes interrupted by ſhort intervals or pauſes.

Electricity as a ſtimulant may be applied, in particular, where there are local defects in the organs, in order to remove obſtructions, and to bring the influence of the vital power on ſuch organs again into full activity.

(b) APPLICATION OF ELECTRICITY AS A CORROBORANT. Electricity acts as a corroborant by its animating power on the vital principle: Whether it be inhaled, imbibed, or abſorbed, it increaſes the activity of life, and conſequently of all the functions. But it has a ſtrengthening effect alſo on all the organic parts; reſtores the elaſticity of the fibres, which

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has been weakened, and maintains an uniform admixture of the component parts: in all cases its action is like that of vital air. Where can we find any means more powerful for maintaining feeble life? When employed in this manner, the electric bath is so beneficial. "Electricity," says an ingenious author *, "is the most powerful promoter of evaporation, because it unites in itself all the properties requisite for that purpose, and therefore it can moderate too violent circulation of the blood, when depending on causes which may be expelled through the surface of the skin. It removes obstructions, partly in consequence of the strengthened action of the stimulated vessels, and partly of a highly subtle all-penetrating matter, which supplies what it wants in mass by the velocity of its motion. It increases the appetite, and promotes all the excretory functions, or only some of them according to pleasure. It is a corroborant; for it gives to the whole body new power and activity, as it animates, in a beneficial manner, the spring of life itself."

The continued application of electricity as a corroborant deserves our attention, since it tends to prolong the lives of the feeble, the infirm, and the old. It ought, therefore, to be more used for this purpose than has hitherto been the case.

In general, the electric method hitherto has been too much limited. It has been employed with advantage only for a few diseases, though it has been proposed for almost the whole of them, and it has been often employed where it was least proper.

In

* Beiträge zur anwendung der elektricität auf den menschlichen körper von J. G. Boeckh. Erlangen, 1794. p. 164.

In general, electricity is applicable in real asthenia, where there is a deficiency in the activity of the vital principle, and where irritability is at the same time weak; where the organic parts are injured, and where the connection of the animal admixture, with the vital principle is deranged. To this head belong most kinds of apparent death, lameness, according to Reil's idea *. Electricity, on the other hand, is not applicable where there is exalted vital activity, and immoderate irritability, a disposition to congestions and bloody flux, and in general in the inflammatory diathesis, where by its stimulus it would render the evil worse.

Galvanism.

§ 464.

The galvanic, or so called animal electricity, is a mean of exciting irritability, even when it exists in a very low degree. It has been proposed, therefore, by Creve, as a test in cases of apparent death; and Sommering throws out a hint, that metallic stimulants might be applied as means for calling into life persons apparently dead; but unfortunately he has not yet pursued this idea any farther. Metallic stimulants might be the means also of prolonging feeble life, in preventing, for a certain period, the exhaustion of the vital principle, by exciting and maintaining irritability. Irritability is a property of ANIMATED organization, an effect of the vital principle, which shews itself still active, even after we can discover no other traces of the vital principle, and which disappears the last,

* Reil Uber die erkentnifs und kur der fieber. Halle, 1797. Part I.

laſt, when the organiſm is completely deſtroyed. We have ſucceeded in keeping it in activity nearly till its complete departure, by means of metallic ſtimulants, without either weakening it or haſtening its annihilation. Hence the advantage of theſe means over all other ſtimulants. The only difficulty is a convenient mode of application. Obſervations made on the activity of the galvanic fluid, when conducted from the rectum to the tongue, may throw ſome light on this ſubject, and in particular, the application of galvanic ſtimulants to the veſſels of the ſkin, by which the ſerous excretions from ulcers are promoted *.

APPLICATION OF THE DIFFERENT KINDS OF ARTIFICIAL AIR.

§ 465.

Though the great benefit which BEDDOES promiſes us from the application of various kinds of artificial air can not perhaps be realiſed, the diſcoveries which modern chemiſtry has made in this reſpect afford us the nobleſt proſpect, in regard to bringing the art of medicine to perfection. The latitude of their application may be extended to every part which comes in contact with the external air; as the lungs, the ſtomach, the bowels, and the ſkin; they act both as ſtimulants and corroborants. But as my object here is not to give a diſſertation on the artificial kinds of air, I ſhall only offer two obſervations on the application of mephitic and oxygen gas. Fixed air is applicable where there is a deficiency of irritability, with a ſufficient ſtock of the vital principle, in order to diſſipate

* Beweis daſs ein beſtandiger Galvaniſmus den lebenſproceſs in dem thierreiche begleitet von. F. W. Ritter. Weimar, 1798.

diſſipate congeſtions, and to ſet the ſtagnant fluids in motion: the other mephitic kinds of gas act by their want of oxygen, and may be employed in the inflammatory ſtate, where there is exalted irritability, as they leſſen the ſtimulus and inflammation. In the oppoſite caſe of leſſened irritability, and activity of the vital principle, where there is no feveriſh affection, but rather relaxation and cachexy, with a high degree of nervous weakneſs, and in Brown's direct debility, where cinchona, æther, and Icelandic moſs, &c. are applicable, oxygen gas may be employed with propriety. How refreſhing for ſuch patients to inhale pure country air, and how beneficial muſt it therefore be, when this air, concentrated by art, is introduced into the lungs.

The artificial application of theſe kinds of air is performed, either by immediately inhaling them into the lungs, or by filling with them the apartment where the patient reſides, ſo that the air may exerciſe its action on the organization in every way poſſible. The experiment which Achard made on animals, by making them inhale different noxious kinds of air, till they appeared to be dead, and then placing them in a veſſel filled with vital air, till they revived, ſeems to confirm this obſervation. To render theſe kinds of air more efficacious, they ought to be more employed, and longer continued: they will then ſerve as artificial means for prolonging life; for promoting the proceſs of breathing, and ſtrengthening the weakened vital principle.

§ 466.

A very old method, the efficacy of which cannot be

be denied, is that of inhaling the vapour of freſh turned up earth, which indeed has in it ſomething ſtrengthening and refreſhing. Bacon was acquainted with a very old man, who every morning, as ſoon as he awoke, cauſed a piece of earth to be held before his noſe, that he might inhale the vapour. He recommends, therefore, the ſmell of freſh earth, which may be obtained by following the plough, or digging up the earth, particularly in the ſpring. Hufeland * has lately recommended theſe means to conſumptive perſons, who may inhale the vapour, either in the open air, or in an apartment. The ſenſation produced by it, is like that felt on inhaling vital air, and is inexpreſſibly animating †. This, therefore, is another mean for maintaining feeble life.

Mineral Waters.

§ 467.

The uſe of mineral waters depends on the quantity of oxygen and hydrogen which they contain, and their proportional union with mineral component parts: they have an animating, ſtimulating, ſtrengthening effect, according to their mixture. It is by this criterion, that we muſt determine reſpecting the uſe of mineral waters for the debilitated: in other reſpects we

* See his Journal, vol. i. p. 386.

† The application of earth, freſhly dug up, I have found of great ſervice in lameneſs of the extremities, eſpecially when accompanied with deficcation. I cauſed the affected part, either in the open air, or in the houſe, to be entirely covered with earth, and to be kept in that ſtate for half an hour. When the part was uncovered, it was found to be in full perſpiration. This proceſs was daily repeated.

we may apply to them what has been ſaid on the employment of ſtimulating ſtrengthening means, and the effect of the artificial kinds of air. Waters which contain a large quantity of oxygen gas, ſerve to animate too weak irritability, and to ſtrengthen the relaxed fibres. In the phlogiſtic diatheſis, where there are crudities in the firſt paſſages, they are counter-indicated; but when mixed with other component parts, or rendered milder in their operation, by the uſe of medicines, at the ſame time, they may be employed with ſafety. Water which contains a great deal of fixed air, requires in its application attention to the ſame rules as thoſe before given, in regard to the uſe of the different kinds of air. Sulphureous waters, where there is great irritability, and a phlogiſtic diatheſis, are improper; but on the other hand, in obſtructions without fever, they are beneficial. What will be ſaid in the third part of this work, on ferruginous means, may be applied to chalybeat waters; the good effects of which will be much promoted by proper regimen.

§ 468.

Light is an object which deſerves the attention of the phyſician. (§ 54.) A moderate degree of light, is that which can be beſt endured by the debilitated. Formerly phyſicians were accuſtomed to place their patients in darkneſs, a very ſingular anecdote reſpecting which may be ſeen in Dr. Zimmerman's converſations with Frederick II. To this head belongs averſion to light, and light-hunger.

§ 469.

Transfusion was formerly considered as a mean for prolonging life, in cases of debility; but the consequences were exceedingly doubtful. The few observations which have been made, afford us very little in regard to the certainty of this method. The proposal of DARWIN is singular *.

* Zoonomia, Part II. p. 220.

CHAPTER V.

REGIMEN FOR THE DEBILITATED.

§ 470.

BEFORE we proceed to the particular objects which form the ſubject of this chapter, we muſt firſt point out two errors into which phyſicians may readily fall, when they lay down rules of health for feeble patients. The firſt is, that the debilitated muſt obſerve a peculiar mode of life, totally different from that of people in ſound health. They are ſubjected to the regimen of invalids, by which means their infirmity is converted into real diſeaſe, and the debility maintained. They are guarded with the moſt anxious care from the influence of the weather, and the leaſt breath of cool air; they are ſcarcely allowed to take the ſmalleſt exerciſe, or if they do, it is with the utmoſt caution, leſt they ſhould be hurt; the tendereſt and moſt delicate food is preſcribed for them; light vegetable nouriſhment, weak beverage; in a word, they are prevented from being expoſed to the action of ſtrong ſtimulants, by which they might be put into greater activity, and they are kept in a continual ſtate of inaction and reſt, by which the internal and external powers are relaxed. To this may be added prejudice, ſuperſtition, and the miſapplication of ſtimulating or ſtrengthening things, which cauſes people to dread all excitement of activity in caſes of debili-

ty, and thereby prevents the poſſibility of ſtrengthening and hardening. If the debility be the conſequence of exceſſive excitement, it may, in moſt caſes, be removed by leſſening the action of the ſtimulants, and not by totally withdrawing them: in regard to external ſtimulants, the nouriſhment, if too ſpiritous, and too highly ſeaſoned, muſt be changed, &c. and in regard to the internal, bleeding and bathing may be employed, &c. Theſe means, however, muſt be adopted only in a certain degree, and for a certain period, in order that the debility may not be increaſed: the object merely is to remove the cauſes of debility. If the debility ariſes from a deficiency of the neceſſary excitement, this deficiency muſt be ſupplied; and in that caſe, the ſtrengthening diet, properly ſo called, is applicable.

By miſtaking the Brunonian ſyſtem, however, we may readily fall into the oppoſite error, and wherever we ſee aſthenia, think only of corroborants. But what kind of corroborants? Without paying attention to the cauſes of the aſthenia, we immediately comprehend under this head, ſtimulating, ſtrengthening food; wine, ſpices, fleſh, and every thing elſe of the like kind. As I have already ſpoken of this pernicious miſapplication, in the introduction to the third chapter, it is needleſs to add any thing more here on the ſubject.

§ 471.

A peculiar regimen is neceſſary for debilitated patients. This, however, does not conſiſt in food and drink prepared in a particular manner, but, generally ſpeaking, in proper attention to that ſtate. A great deal

deal muſt depend on previous habit and mode of life. Debilitated perſons, by careful attention to their conſtitution, to whatever is beneficial or hurtful to them, may prolong their lives for a conſiderable time, if their conduct, guided by the neceſſary knowledge and experience, is ſeconded by the advice of the phyſician. To guard againſt immoderation, and to purſue with care a middle courſe, will be the beſt means to accompliſh the propoſed end.

§ 472.

Debilitated perſons muſt be hardened, by leſſening their ſenſibility in regard to ſtimulants. This hardening is the more neceſſary, as it is not always in our power to remove or withdraw the ſtimulants. Even the moſt delicate may, at a later period of life, attain to a certain bodily ſtrength and firmneſs; and, on the other hand, thoſe who have been educated in a very hardy manner, and grown up to be men, exposed to country air, and ſevere manual labour, by a ſedentary life within doors, and refinement, may become exceedingly tender, and ſenſible of the ſlighteſt impreſſions. I am acquainted with the ſons of ſeveral country farmers, who having followed literary purſuits, acquired in a few years all the bodily debility and nervous weakneſs which belong to ſuch a ſtate. Have they loſt or gained by the change?

The bodies of debilitated perſons muſt be gradually hardened. We can attain to real ſtrength, only by a ſlow and tedious proceſs. The tranſition to a more healthful mode of life, muſt be gradual, and muſt take place in ſuch a manner, that the patients be not ſubjected to any diſagreeable reſtraint. Beſides, this

hardening method muſt be continued for a ſufficient length of time, and people muſt never return to their former debilitating habits. This hardening conſiſts partly in guarding againſt debilitating cauſes, and partly in employing ſtrengthening means. The firſt forms the chief part of the cure. It is alſo the moſt difficult, and for that reaſon is too much neglected, as every thing is expected from corroborants. People plunge into the bath, and employ preparations of iron and herbs, wine and cinchona, without leaving off their darling habits; find themſelves deceived, and lay their infirmity and diſeaſe to the charge of the phyſician and his art.

The phyſician muſt endeavour to find out the remote cauſes of the debility, and having diſcovered how far they depend on the will of the patient, muſt make the removal of them an indiſpenſible condition. There are caſes in which the phyſician, if he acts properly, and conſiſtent with his own duty, will leave patients who have not reſolution to conſent to this removal, rather than degrade his art by improper compliance. The fault in the end, however, falls on the phyſician.

This hardening is either general or local; changing the former debilitating mode of life, removing from town to the country, the daily uſe of free air, laying aſide too warm clothing, abandoning the uſe of too ſoft a bed, and accuſtoming one's ſelf to bodily labour proportionate to the ſtrength. The tranſitions muſt take place gradually; if they are made ſuddenly, they may be attended with danger. A great deal will depend on this improvement, in our mode of life, being the conſequence of reſolution and conviction.

tion. Of this CORNARO has given us an example worthy of imitation. In his thirty-sixth year, when his body was enervated in the utmost degree by dissipation, he had the courage to subject himself to the observance of the strictest regimen, by which he guarded, on the one hand, against debilitating causes, and on the other determined the nature and quantity of his food. His resolution was therefore rewarded with a life of nearly a hundred years.

§ 473.

Local hardening of the organs consists partly in strengthening those organs which are more debilitated than others, and partly in strengthening the chief vital organs, in order to strengthen and maintain, by these means, the health of the body in general.

Sometimes individual parts of our bodies suffer from a particular debility; as for example, the stomach, the lungs, the eyes, the extremities, &c. This debility may be known by some imperfection in those parts; by their incapacity for discharging their peculiar functions; by certain affections which take place in them; by a disposition to local diseases, and, in the last place, by their peculiar susceptibility for the general diseases of the body, by which they are chiefly attacked. Frequent pain of the stomach, belching, the symptoms of indigestion, when they occur after a light meal, a particular weakness of the organs of digestion in disease, or the appearance of these affections on the commencement of disease, are signs of a weak stomach. Organs debilitated in this manner, must be strengthened; and by these means we shut one passage against disease. I here allude to the strength-

ening means of food. This ſtrengthening method we muſt direct either towards the ſuffering organ, in particular, or we muſt by general ſtrengthening reſtore the deranged equilibrium of the whole organization. We ſtrengthen the organ of the ſkin by cleanlineſs, waſhing, bathing, the uſe of freſh air, moderate exerciſe; the lungs by inhaling pure air, and by the moderate uſe of the voice; the ſtomach, by moderately ſtimulating food, motion, and bodily labour, &c. One organ is ſtrengthened by another, with which it is connected; for example, the organs of digeſtion, by ſtrengthening the ſkin, &c. It may be here readily underſtood, that debilitating cauſes muſt be guarded againſt at the ſame time. By ſtrengthening and hardening the body, in an uniform manner, we remove partial debility, which may have ariſen from the excluſive uſe of certain organs.

By ſtrengthening the principal organs, we endeavour to maintain health in general. This ſtrengthening method conſiſts not ſo much in corroborants applied to theſe organs, in particular, as in careful attention to maintain them in a certain ſtate of perfection and ſtrength, and to guard them from debilitating cauſes. It is of the utmoſt importance, that life ſhould be preſerved ſufficiently active in theſe principal organs, as long as poſſible. On this depends the prolongation of our exiſtence. The lungs, the ſtomach, the ſkin, and the organs of generation, are thoſe chiefly to which our attention ſhould be directed, and on the good ſtate of which our health and well-being principally depend. The health and good condition of only one of theſe organs, has a great influence in maintaining life. As a proof of this,

this, let us only attend to the obſervation that old people have generally a good ſtomach, and that eunuchs never attained to a great age, &c. The chief point here is to guard againſt all thoſe things which have a pernicious influence on theſe organs.

§ 474.

I now come to the diætetic regimen for debilitated patients; but without giving a general ſyſtem on this ſubject, I ſhall confine myſelf to a few obſervations in regard to the aſthenic ſtate,

§ 475.

The firſt thing requiſite for maintaining life, is PURE AIR; and this is the principal condition under which the reſtoration of health is poſſible. But in defining the relative goodneſs of air, in regard to patients, we make a diſtinction between the two following ſtates:

1. EXALTED UNNATURAL ACTIVITY OF THE VITAL PRINCIPLE; the conſequence of which is increaſed irritability, and feveriſh affections.

2. LESSENED, WEAK ACTIVITY OF THE VITAL PRINCIPLE; weakened irritability, a ſerous, cachectic diatheſis.

In the firſt caſe, too pure air would exalt the excitement, promote the inflammatory diatheſis, increaſe the already too great quantity of oxygen accumulated in the body, and, by theſe means, haſten the conſumption of life. This, however, is particularly the caſe, when an exceſs of activity and irritability exiſts in the lungs; and hence it happens that conſumptive people find themſelves much worſe in a high ſituation,

ſituation, where the country is dry, than in low and damp diſtricts. In ſuch a ſtate, air that contains a greater portion of carbon is more ſerviceable. The obſervation of Marcus Herz, that, during the prevalence of a putrid fever, he ſaw more poor patients in low confined hovels, filled with mephitic air of every kind, get the better of the diſeaſe, than people of the higher claſſes in ſpacious apartments, where the air was improved by inceſſant fumigation, and kept cool by a continual draught, is highly worthy of attention. But of this more hereafter.

In the ſecond caſe, where there is leſſened irritability without fever, a ſcorbutic cachectic diatheſis, where we ſuppoſe a great portion of carbon in the admixture of the juices, pure air which contains more oxygen is required. Such patients, when in high diſtricts, find themſelves much better: at ſome future period, perhaps, they will be ordered to undertake aerial voyages, as in the oppoſite caſe ſea voyages are recommended.

Marcus Herz,* with great propriety, makes a diſtinction between impure and corrupted air. Air, not pure in a high degree, which has in it a leſs portion of oxygen, and which beſides contains a greater quantity of carbon, and many foreign component parts, moiſture, water, animal matters, &c. is not, on that account, entirely corrupted and prejudicial to health, provided a large quantity of azot is not preſent and if theſe foreign component parts are mixed with it only in a certain proportion. But air is corrupted and unfit for reſpiration if it contains an exceſs of carbon, and

* Hufeland's Journal der prakt. heilk. II. p. 60.

and is contaminated with a great quantity of foreign component parts. It is, indeed, difficult in this reſpect to avoid miſconception; but regard muſt be had to the ſtate of the organization. Where there is great irritability, where the organic mixtures have a tendency to be diſſolved, as in the putrid diatheſis, the ſcurvy, and conſumption, too pure air is prejudicial. The companions of the brave Captain Berings by theſe means loſt their lives, as appears from the following paſſage in Muller's Collections reſpecting the Hiſtory of Ruſſia: "When orders were given for carrying the ſick on ſhore they were all overjoyed, immediately got up, and put on their clothes, imagining that they would ſoon be cured; but when they proceeded from the lower part of the ſhip, where they lay, to the damp air of the quarter-deck, which was filled with a great many foreign particles, they expired." All this, however, muſt be underſtood conditionally*.

But this obſervation ought not to prevent us from endeavouring to obtain relatively pure and good air; from ſupporting public inſtitutions for promoting cleanlineſs; and from rendering the air, if poſſible, as pure as is neceſſary for preſerving health. By an exceſs of the noxious kinds of gaſes, the air of marſhes, the gas produced by animal bodies, &c. the goodneſs of the air is corrupted. Such air is exceedingly prejudicial to health, and produces diſeaſes and death. But the caſe is different where, in certain morbid ſtates, too pure air increaſes irritability, and haſtens vital

* See Lichtenberg's explanation, in the preface to the fourth edition of Erxleben's *Anfangsgrund der Naturletere*, p. 29. Roſchlaub's Pathogeny, II. § 1035.

vital consumption. We know that many stimulants have a totally different effect on a diseased from what they have on a sound body. The change or sudden transition from air filled with azotic or carbonic gas, to air which contains a great deal of oxygen, is highly dangerous. It must not be inferred from what has been said, that azotic air is the best for sick persons, or that the more impure the air they can endure it the better.

But is not residence in the country, and the use of pure air, beneficial to debilitated patients, who, had they remained in the thick vapours of the town, would have been in their graves? All this is true; but, even in the country, the air is not always of the purest kind, and is sometimes hurtful to the lungs, though the situation may not be very high. In the country we only have air better than that in town; air free from the before-mentioned noxious mixtures.

The air may be purified by restoring its motion. Stagnant air becomes corrupted in the same manner as stagnant water. Opening the windows, and making currents of air, are the best means for purifying it; whereas fumigation dries the air too much, and fills it with stupifying vapours. Sprinkling or pouring vinegar on ignited stones, disengages carbonic acid gas; a better method is to evaporate vinegar slowly at a gentle heat.

A moderate temperature of the air is that best suited to health. Heat increases irritability to an unnatural degree; dries up and consumes the fluids of the body; excites an unnatural warmth; occasions an excessive determination of the juices towards the skin, and produces accumulations in individual parts, and particularly

particularly in thoſe to which there is naturally a great influx of blood, ſuch as the brain and the heart. The conſequences of all theſe unnatural changes in the body are occaſioned by over-heating. Habit, however, makes an exception. The effects of cold on the body have been already ſhewn. The influence of the air is changed by moiſture or drought, and by its connection with heat or cold. The object of this work, however, does not allow me to proſecute farther this ſubject, which may be found treated in all compendiums on diætetic rules.

Nourishment.

§ 476.

Debilitated patients require no particular food, or food prepared in a particular manner; their regimen in this reſpect muſt be directed merely according to their ſtate. Too light, weak nouriſhment is as improper for the debilitated, as ſtimulating or aſtringent food. But in regard to food, far more depends on the nature of the powers of digeſtion, the ſtate of the organization in general, and on habit, than on the nature of the ſubſtances uſed. People have laid too much ſtreſs on examining the quality of food, and deduced conſequences, in regard to its digeſtibility, which are not altogether agreeable to truth, without reflecting that nouriſhment in our ſtomach, which is an animated organ, undergoes changes totally different from what it does in the hands of the chemiſt. The moſt indigeſtible food, according to every appearance, is uſed by whole nations without any bad conſequences. But this obſervation muſt not lead us ſo far as to declare all

all kinds of food digeſtible; but by comparing their quantity and quality with the ſtate of the organization, we may form an opinion how far they can be employed with ſafety.

The ſtate of the debilitated is totally different from that of the ſound. The faculty of digeſtion is deſtitute of the ſtrength neceſſary for preparing the food; the influence of the vital power on the organ of digeſtion is leſſened; the fibres of the ſtomach are deficient in elaſticity, and therefore too little nouriſhing matter is extracted from the food; more of the coarſer weak parts, incapable of affording nutriment, remain behind, and on account of the leſſened power are not ſufficiently evacuated; the relaxed fibres of the ſtomach are unable to oppoſe the extenſion of the volume of the food. Sometimes the irritability of the ſtomach is exceedingly great; and the immediate conſequence is pain and uneaſineſs after eating, or the food is thrown out in an undigeſted ſtate. In aſthenia, the general ſtate of the organization is to be conſidered; its ſenſibility or inſenſibility in regard to ſtimulants; the increaſed or leſſened activity of the vital principle on account of the great conſenſus in which the organ of digeſtion ſtands with the other organs. In debility and diſeaſe there are many other external circumſtances which have an influence on the activity of digeſtion; and in conſequence of which it is periodically weaker or ſtronger.

In debilitated perſons, and invalids, the appetite is no ſure guide, as their organs of taſte are either blunted, or too irritable. The ſenſation which ariſes after the uſe of food is far more certain. Uneaſineſs after meals, oppreſſion at the ſtomach, belching, ſwelling

 of

of the belly, heat in the head, are ſigns that people have eat more than they can bear.

I muſt not omit to give ſome rules for debilitated people in regard to their meals, by the obſervance of which their food may be rendered digeſtible and nutritive.

1. TO MASTICATE WELL. By maſtication food is reduced to a good paſte, by which means the ſtomach is freed from the heavieſt part of its labour, and can with more eaſe extract from the food its moſt nutritive parts. Thoſe who maſticate well require a far leſs quantity of food, becauſe the nutritive matter in it is employed in greater quantity. It is probable that, during maſtication, the lymphatic ſyſtem takes up many uſeful particles, of which, by improper maſtication, the body is deprived.

2. TO OBSERVE A CERTAIN REGULAR ORDER IN THE USE OF FOOD. The ſtomach, for its operation, requires time and reſt: continually throwing in food, even when a little is taken at one time, keeps the ſtomach in an inceſſant ſtate of irritation, and excites an unnatural craving for food, ſo that at laſt there ariſes a prejudicial exceſs.

3. TO EAT LITTLE IN THE EVENING. A heavy meal at night is improper, becauſe the ſtomach has been filled at dinner with food which is then not completely digeſted. Hence interrupted ſleep, and a determination of the blood towards the head.

4. TO AVOID ALL INTERRUPTION OR DISTURBANCE DURING MEALS. While the ſtomach is employed, the other organs muſt not be in too great activity. The labour of the ſtomach is impeded above all by overſtrained activity of the organ of the ſoul; by violent

violent paſſions; by exerciſing the powers of thought, &c.

5. TO AVOID AFTER MEALS ALL MENTAL AND BODILY EXERTION. The miſchief which ariſes from violent paſſions and ſtudying after meals is well known. Violent exerciſe alſo impedes digeſtion, excites vomiting and vertigo, and particularly in caſes of debility.

6. TO DRINK TOO MUCH, DURING MEALS, IS HURTFUL. By theſe means the ſtomach is diſtended, and the food, by being too much diluted, is rendered leſs nutritious.

§ 477.

ANIMAL FOOD is much decried by many of the faculty, as producing ſolution of the juices, accumulations of lixivious acridities, &c. while others recommend nothing but animal food, even in the moſt dangerous and hotteſt diſeaſes.

Animal food, as BROWN himſelf allows, is to be claſſed among ſtimulants; "fleſh alone," ſays he, "and all diſhes prepared with fleſh, are food from which too much excitement is to be apprehended."

We know that animal food increaſes irritability, and promotes the inflammatory diatheſis; and therefore we ought not to recommend it ſo unconditionally as BROWN does (§ 266) in every degree of the aſthenic ſtate. It muſt naturally, if uſed immoderately, be attended with bad conſequences where there is exalted irritability. In this ſtate, fleſh alone is highly improper. The caſe, however, is ſomewhat different when it is uſed with the addition of vegetables, or in broth; but even in that caſe the fat muſt be ſeparated, becauſe it is altogether undigeſtible and pernicious.

cious. But animal food is not accompanied with all thoſe bad qualities aſcribed to it: on the contrary, in a moderate quantity it is neceſſary for a weak ſtomach; it is hurtful only when uſed in exceſs, and alone. Animal food, in a ſmall quantity, contains more nouriſhing parts than vegetable food, but at the ſame time it is more ſtimulating. It muſt be given in ſuch quantity as to leave no reaſon for any apprehenſion on account of its ſtimulating quality; conſequently muſt be rendered milder by a mixture of vegetables. Fleſh broth is leſs ſtimulating and yet nutritive. There is no prejudice more deſtructive than that of forbidding all animal food to patients labouring under real vital debility; in tedious diſeaſes vegetable food is too inſufficient to repair the loſt powers, unleſs uſed in a great quantity; but in that caſe it is attended with a worſe conſequence, as it diſtends the ſtomach too much by its volume, and beſides does not give the ſtomach that ſtimulus neceſſary for digeſtion. In that ſmall quantity which can be given to a weak ſtomach, without injury, it is not ſufficiently nutritive. Vegetable food alſo to be digeſted requires great activity of the power of action in the organization, by which the digeſtive faculty is put into ſtronger activity. This power of action depends on real vital ſtrength; the greater the vital ſtrength, the better is the ſtate of the organic parts; the firmer and denſer are the fibres, and the better will vegetable food be endured: the power of action is maintained by motion and bodily labour. The ſtrongeſt and moſt laborious men are therefore the beſt fitted for a vegetable diet, which, on the other hand, is improper for enfeebled perſons, who lead a ſedentary kind of

life; to ſuch people it occaſions uneaſineſs at the ſtomach, and other evils, and increaſes their weakneſs and debility.

A proper combination of vegetable and animal food (but the quantity of the latter muſt never be diſproportioned to the former, rather too little than too much fleſh) is the beſt ſuited to debilitated perſons (§ 408); but in particular meat ſoups, freed from all fat, ought to be recommended.

FAT to a weak ſtomach is highly prejudicial; it becomes ſoon rancid, gives riſe to corrupted acridities and putrid fermentation, and occaſions inflammation of the ſtomach.

§ 478.

A weak ſtomach cannot well bear ACIDS, though acid food and drink have been ſo unconditionally recommended to the feeble and ſick. In the ſthenic ſtate, where the organs of digeſtion are not deficient in the power of action, acid food and drink may be of ſervice; but where digeſtion is exceedingly weak they muſt be avoided. They occaſion contraction, thicken the juices, and ſtimulate the fibres of the ſtomach; it is, therefore, improper when hypochondriſts and others, who ſuffer from a weakneſs of the inteſtines, are allowed to uſe too much acid food. This holds good in regard to acid liquors, water mixed with vinegar, &c. which are adminiſtered ſo unconditionally in all diſeaſes, and which are fit only in real ſthenia, where there is an inflammatory diatheſis, but not in real aſthenia, where there are viſcidities and great weakneſs of digeſtion.

§ 479.

MILK, except when drawn immediately from its ſource, requires a ſtrong ſound ſtomach; by every kind of preparation it loſes in regard to its digeſtibility, goodneſs, and nutritive qualities. This may ſerve to ſhew how improper it is to preſcribe an unconditional milk diet to the debilitated.

§ 480.

In regard to DRINK, people muſt guard againſt TOO MUCH as well as TOO LITTLE. The firſt weakens digeſtion and diſtends the ſtomach; the ſecond occaſions deſiccation.

The moſt ſalubrious drink is WATER drawn from a ſpring; but it is neceſſary that one be accuſtomed to it from infancy. Many cannot bear water unleſs it has been boiled.

BEER, ſuppoſing it to be pure and fully fermented, is a nouriſhing ſtrengthening liquor for the debilitated. I have known men highly weakened by the loſs of blood revived merely by the uſe of beer.

WINE is a real medicine, the principal corroborant in actual debility, where there is a deficiency of vital principle; it refreſhes, invigorates, and ſtrengthens digeſtion, and can be employed in a quantity proportioned to the deficiency of the ſuſceptibility of irritation, but only in real debility. On the other hand, where there is immoderate irritability and vital activity, with feveriſh affections, it is hurtful; for it is the greateſt ſtimulant as well as the firſt corroborant.

BRANDY, and other hot ſpirituous liquors, are not proper for the ſick; they exceed wine in their ſtimulating properties, without poſſeſſing its ſtrengthening

ening power. Habit and cuſtom, however, make here an exception; and brandy to brandy-drinkers is the greateſt of corroborants, which, when they are attacked by diſeaſe, muſt not be withdrawn from them.

§ 481.

MUCILAGINOUS VISCOUS food, mealy fruits, and eggs, &c. have the property of ſupplying the loſs of nouriſhing parts, and are therefore of great benefit to exhauſted, debilitated patients, but in particular when combined with meat ſoups, by which they are deprived of their inclination to acidity; they ſoften the acridity of the juices: the ſalap root, rice, barley broth, macaroni, and ſago,* have the ſame effects.

Freſh eggs boiled ſoft, are nouriſhing, and eaſy of digeſtion. An egg beat up with ſugar and a little wine affords excellent nouriſhment.

SUGAR deſerves that praiſe beſtowed on it by Hunter †, as one of the beſt corroborants when the body has been weakened by long faſting. It ought to be uſed in all the food given to debilitated perſons.

§ 482.

Sometimes the diſeaſe prevents nouriſhment to be given in ſuch a quantity as is neceſſary for maintaining life. Aſſimilation is ſo weakened, that the nouriſhing matter cannot be employed for nutrition; the organs

* We are told by Thunberg, in his *Flora Japonica*, that the Japaneſe ſet a high value on the pith of the trunk. They aſſert that ſoldiers, in the time of war, may, with a ſmall portion of it, maintain life for a conſiderable time.

† Ueber di vener. Krankheit, Leipſie, 1787, p. 605.

organs deſtined for receiving and preparing the nutritive matter are injured and unfit for their functions; it is impoſſible, or at leaſt difficult, to convey the nouriſhment through the uſual paſſage, the mouth, as in the caſe of a locked jaw, or the ſtomach is ſo weak that every kind of nouriſhment occaſions the moſt violent affections from indigeſtion, or ſo irritable that the nouriſhment is thrown out indigeſted. In theſe caſes, on account of the violent conſumption of the powers internally, and the want of reparation from without, death from exhauſtion is to be apprehended. To prevent this, and to remove the continually increaſing debility, much art is neceſſary in the choice and preparation, as well as in the application of the requiſite nouriſhment.

When ſolid food cannot be given, or if it irritate the ſtomach too much, recourſe muſt be had to gelatinous food, pulps, nouriſhing, ſtrengthening ſoups, vegetable mucilages, meat broths, eggs, ſago, rice, ſaloop, barley broth, ſhell fiſh, oyſters, fowls, with a proper addition of ſugar, milk, whey, and particularly ſweet whey. Theſe kinds of food which can be digeſted by a weak ſtomach, are, in ſmall quantities, exceedingly nouriſhing, and where the lymphatic fluids have been exhauſted by violent evacuation, ſupply matter for repairing that loſs. The great benefit of them in caſes of flux, lientery, ſalivation, and ſcurvy, is well known.

When nouriſhment cannot be conveyed into the body through the uſual paſſages, there ſtill remains the rectum and the ſkin. Nouriſhing injections of cinchona, and meat broths may be adminiſtered, or fomentations of this kind, baths of meat ſoups

and of cinchona may be applied; the ſteam of milk may be introduced into the mouth, and nouriſhing matter may be injected through the œſophagus. To ſtrengthen, at the ſame time, baths, fomentations, and injections of wine, may be employed. Theſe are means for procuring a reſpite to feeble life when in the utmoſt danger; and it ſometimes happens that the powers are thereby maintained till nature is again able to become active.

We obtain nouriſhing matter for our bodies even through the ſkin. Some ſeamen, who ventured in an open boat on the ocean without proviſions, ſupported themſelves for ſeveral days by merely dipping their clothes in ſea water. In caſes of hydrophobia, fluids are conveyed into the ſtomach from a covered veſſel. In ſcirrhous ſwellings of the throat, Darwin * propoſes to adminiſter milk in a bladder faſtened to a reed or catheter. The tube is to be introduced into the gullet, and the milk to be preſſed from the bladder into the ſtomach. The means to be employed, in general, in ſuch caſes, may be found in thoſe authors who have treated on theſe diſeaſes. In caſes of the moſt urgent danger, the phyſician often receives moſt aſſiſtance from ſome fortunate incident.

In ſuch caſes we muſt never forget to ſupport the vital principle, that the reception and aſſimilation of nouriſhing matter may at leaſt be promoted. Nothing anſwers this purpoſe better than wine. With nouriſhing baths friction is to be combined, to promote the activity of the organ of the ſkin in abſorbing the nouriſhing matter.

MODERATE

* Zoonomia, vol. ii. p. 1, p. 218.

MODERATE EXERCISE is alſo neceſſary for the debilitated. By inactivity the powers are loſt; but this bodily motion muſt be ſuited to their condition. If the power of action be weak, and irritability very great, that is in a high degree of aſthenia, only gentle or rather paſſive motion can be endured. I have ſeen the condition of conſumptive patients rendered ſo much worſe by geſtation that the fever was conſiderably increaſed. But where there is no great deficiency in the power of action, where, in general, the vital principle is rather oppreſſed than leſſened, ſtronger motion may be admitted. Bodily motion is, without doubt, an auxiliary in the cure of debilitated patients, or at leaſt in prolonging their lives, eſpecially when combined with the uſe of free air.

§ 484.

The more we enjoy the free country air the better it is for health, and happy are they who can ſpend their whole lives in it. Nothing is more ſtrengthening and invigorating than a country life.

§ 485.

Debilitated perſons muſt uſe clothes neither too cold nor too warm; in this reſpect they muſt be guided by the climate and the changes of the weather. For warmth, woollen clothing is preferable to fur, which, when the cold is moderate, keeps the body too hot, and increaſes perſpiration. Flannel or woollen cloth, worn next the ſkin, preſerves the body in an equal temperature, protects it from the influence of great heat as well as of great cold, and is particularly ſerviceable where there is a rheumatic

and gouty diathesis.* In a word, the head must be kept cool and the feet warm; but in regard to the former, old people make an exception; a great deal, however, depends on habit. Those who have been accustomed from their infancy to warm clothing must not suddenly lay it aside. Narrow clothing, bandages, and strait shoes, must be carefully avoided. The less the clothing impedes the free motion of the body, the less it presses and confines, the more proper it is.

§ 486.

By a careful observance of CLEANLINESS, debilitated people may avoid many disagreeable consequences, which arise from neglecting to take care of the skin. Frequent changing the clothes, particularly the linen, and those next the body, will prevent its own evaporations from being again absorbed; airing and cleaning beds, which in summer ought to be done every month or six weeks, and in winter every two months, at least, are the more necessary, as beds attract many impurities, which particularly during sleep, when the absorption of the vessels of the skin is carried on with more activity, are again received into the body. Nothing is more invigorating than frequent washing and bathing; washing the body daily with cool water has been already recommended (§ 462). Debilitated persons, who have not been accustomed to this practice, must wash first with cool and then with cold water. This is an excellent corroborant both for children and adults.

§ 487.

* The use of flannel next the skin has been unconditionally recommended to feeble patients. Hufeland, however, has given such proper directions on this head in his "Art of Prolonging Life," that nothing farther need be said on the subject.

§ 487.

What better means than bathing can be recommended for ſtrengthening a debilitated body? It is not only a preventative of aſthenic diſeaſes, but the beſt remedy in the aſthenic diatheſis, as nothing is more efficacious to remove immoderate ſenſibility in regard to the air and weather; too delicate irritability in regard to external impreſſions, and even contagious poiſons; and to render the ſkin a coat of mail to defend us from many external dangers. By theſe means the free activity of the organ of the ſkin, the buſineſs of excretion and ſecretion, are reſtored and maintained; and this has a moſt beneficial influence on the whole organization (§ 453).

In employing the bath we muſt never loſe ſight of the ſtate of the animated organization. For debilitated perſons the tepid bath is propereſt, but it ought never to exceed twenty-five degrees of Reaumur. In winter, the patient muſt bathe in a warm apartment. It will be of advantage to add to the water a decoction of from two and a half to three ounces of ſoap; it may alſo be rendered more efficacious by ſtrengthening herbs and roots. For this purpoſe, three ounces of cinchona, or from five to ſix ounces of the flowers of lavender or camomile may be uſed. The patient, in general, ſhould bathe every other day. In the height of ſummer, when the water is thoroughly warm, debilitated perſons may bathe in any river. Bathing in a river has this advantage, that the water contains caloric which can be communicated to it by no art; and that as it is in continual motion it thereby penetrates better into the body. But except in the height of ſummer, in the months of July and Auguſt, I would

I would not recommend river bathing to the debilitated, but, at any rate, they ought to bathe five or ſix hours after eating; and in the evening, at which time the water is warmeſt.

For houſe-bathing, in ſummer, river water, provided there be any in the neighbourhood, ought to be employed in preference to any other; or the water ſhould be ſuffered to ſtand all day expoſed to the ſun, that it may acquire a more animating quality by the calonic and oxygen which it thus imbibes. To this may be added a proportional quantity of boiled water.

It muſt likewiſe be remembered that people ſhould never bathe with a full ſtomach, or when the body is hot; and that they ſhould plunge into the water gradually, firſt waſhing the head and breaſt, to guard againſt feveriſh affections. Thoſe who labour under debility muſt, at firſt, remain in a river only a few minutes; in the tepid bath in the houſe they may continue a quarter of an hour, but while bathing they muſt make as much motion as poſſible. Catching cold, while bathing, is exceedingly pernicious, as the mouths of the abſorbing veſſels are open and diſtended; conſequently, any ſudden change from heat to cold makes a pernicious impreſſion on the ſkin, which is then highly ſenſible; the veſſels are abruptly cloſed, and by the ſudden change in the organs of the ſkin, a dangerous change is excited in the body. The whole body, therefore, muſt be immerſed in the water up to the chin; or the upper part of the body, out of the water, muſt be covered. For houſe-bathing, a ſufficiently large tub ſhould be employed; otherwiſe, while the lower part of the body in the water is completely warm,

warm, the upper, uncovered part, will be expoſed to catch cold.

On coming from the bath, the body ſhould be inſtantly wiped dry, and the clothes immediately put on.

After bathing, the increaſed perſpiration ſhould be maintained by moderate exerciſe; exceedingly feeble perſons ſhould go to bed.

It will be highly proper to combine friction with bathing (§ 447.) both during the time the body is in the water, and after the bathing is finiſhed: by theſe means, the activity of the veſſels of the ſkin will be maintained, and an uniform motion of the juices promoted.

§ 488.

Debilitated perſons require more reſt than thoſe who are ſtrong, to prevent that waſte of the powers which is occaſioned by great activity of the muſcular functions. Many diſeaſes cannot be cured, becauſe the neceſſary reſt is wanting. Nothing tends more to ſtrengthen than ſound and uninterrupted ſleep, which the phyſician muſt endeavour to promote. This may be done not only by ſedatives, but alſo by proper conduct. Labour and exerciſe ſuited to the ſtrength; tranquilliſing the mind, the tepid bath, a clean but not too ſoft bed, and a ſalubrious roomy apartment, the air of which is ſufficiently purified, are the beſt means for this purpoſe. The exerciſe muſt never exceed the powers, elſe the activity of the power of action will be too much increaſed, and the conſequence will be too great mobility of the nerves, violent circulation of the blood, and interruption of ſleep.

Free

Free air has a particular tranquillising quality. People never sleep better than when travelling. A little before going to bed, every thing that tends to give increased activity to the powers of the imagination, must be carefully avoided. Gentle, agreeable mental stimulants; simple ideas, which tire by their uniformity, are the best for disposing the mind to sleep. By the power of the will, and continued custom become habit, we may give to the mind, at the time of retiring to rest, a certain periodical insensibility in regard to mental stimulants. Sometimes the tepid bath, or bathing the feet at bed-time, promotes nocturnal repose. Too soft a bed is rather unfavourable to sleep; as too great a quantity of feathers heat the body, and produce debilitating perspiration. In summer matrasses are far more healthful. In our northern climates, indeed, we are accustomed in winter to feather beds, and I have observed bad consequences arise from exchanging them for matrasses, during that cold season. In persons having a gouty or rheumatic predisposition, the disease was by these means called forth. A well stuffed bed, with a pillow of the same kind, inclosed in a clean pillow case, and laid upon a bag of straw, with another light bed, instead of blankets, is recommended in preference to any other*. A pillow stuffed with horse hair, is better than one stuffed with feathers, as the head ought always to be kept cool. Debilitating warmth is increased by too many bed clothes. The bed room must be airy, and at a distance from noise. In the day time, the windows should be kept open, and in summer this

ought

* Adair's Medizin warnungen für schwächliche personen aus dem Engl. von Michaelis. Zittau und Leipz. 1791. p. 436.

ought to be done alſo in the night, making uſe of venetian blinds. ELECTRICITY is a good palliative for promoting ſleep. I have obſerved, in general, that people ſlept much better at night when they uſed an electric bath in the day time. But it is only the gentler kind of electricity that tranquilliſes. Perſons who complain of want of ſleep ſhould, before night, employ the electric bath for a quarter of an hour or longer; at any rate, this may be of uſe for a certain period, till the patient becomes habituated to this ſtimulant.

In the laſt place, a great deal can be effected by HABIT, which combines ſo many animal actions with our daily functions. Thoſe who accuſtom themſelves to ſleep, and to get up at a certain hour, will generally be viſited by ſleep about the uſual period. This habit tends to render ſleep much ſounder.

§ 489.

One of the principal ſources of aſthenia, is VENEREAL DISSIPATION. Without continence in this reſpect, it will be impoſſible to reſtore enervated people to health, or to preſerve them in life: Where this is neglected, all palliatives for ſtrengthening the body, and particularly the organs of generation, will be of no avail. The moſt important are the moral means, reſolution, and continual firmneſs to guard againſt diſſipation, however difficult it may be. To ſecond theſe means, the phyſical may be employed: labour and exerciſe; a certain degree of mental activity; getting up early in the morning, as ſoon as one awakes; the daily and frequent uſe of free air, without too much regard to the weather; bathing and

local

local corroborants applied to the affected organs. Moral and physical means must be combined.

§ 490.

Moderate activity of the powers of thought, is an excellent mean for maintaining the life of those who are accustomed to mental labour. Works which require bodily exercise, and at the same time a certain agreeable activity of the mind, are exceedingly beneficial to people accustomed to labour with the head. Multiplicity of mental occupations, and exertion to accomplish a certain object, always afford fresh nourishment to the vital principle, while the being employed on agreeable objects, rivets the attention of the soul, and abstracts it from those which are disagreeable. Lessening the too great activity of the organ of the soul, by a transition to placid, agreeable ideas, will lessen, in general, the great irritability of the organization, as the consequences of the lessened irritability of the organ of the soul will be communicated to the body in general.

Sometimes a periodical lessening of the activity of the soul, will have the best influence on the health; but care must be taken to guard against the prejudicial effects of languor. The intervals must be filled up with occupations which require little thought, but at the same time sufficient to afford amusement. Thus a literary man, subject to hypochondriasis, was cured merely by abstaining from study during a whole summer, and becoming a rustic in the proper sense of the word.

§ 491.

§ 491.

Tranquilliſing the mind, freeing it from violent paſſions, and tormenting cares, has the moſt ſalutary influence in maintaining health and life; and without theſe, all other means will be ineffectual. Exciting agreeable mental activity, joy, hope, and love; moderate exertion, and exalted paſſions, prolong our exiſtence, notwithſtanding the greateſt bodily debility. In the degree that theſe are deficient, vital conſumption will be accelerated. Every thing, therefore, depends on maintaining a cheerful frame of mind, and in promoting good ſpirits by agreeable converſation and employment, travelling, a country life, friendſhip, ſocial intercourſe, and reading.

CHAPTER VI.

ON THE MEANS OF MAINTAINING FEEBLE LIFE IN DIFFERENT ASTHENIC STATES.

I. MAINTAINING FEEBLE LIFE IN CHILDHOOD.

§ 492.

1. TREATMENT OF FEEBLE NEW BORN CHILDREN.

MAN, of all created beings, comes into the world the weakeſt and the moſt helpleſs. As Rouſſeau ſays, he would be obliged to lie on the ſpot where he is placed, like an inverted tortoiſe, were he not removed from it by the hands of others. Man, however, brings into the world with him, not only natural debility and helpleſſneſs, but artificial diſeaſed debility, tranſmitted to him by debilitated, diſeaſed parents. Do we not ſee phthiſicy, cachectic, and venereal children brought into the world, who exhibit in their whole phyſiognomy traces of feebleneſs and old age? Sometimes children come into the world imperfect; their organs are not completely expanded, (§ 187.) and art muſt aſſiſt nature to effect complete conformation. Difficult and long continued parturition is likewiſe a cauſe of debility in the children, which are then feeble, and born only half alive.

§ 493.

We muſt make a diſtinction between that debility which is the conſequence of an actual deficiency of the

the vital principle, or rather of irritability, as in the children of debilitated parents, and that feebleneſs which ariſes from oppreſſed activity of the vital principle, or rather confined irritability; (§ 39. § 94. § 104.) as for example, when a child which in the womb had been exceedingly lively, and according to every appearance ſtrong, has ſuffered during the birth, and come into the world apparently lifeleſs. In each of theſe caſes, the ſtrengthening method muſt be different. In the firſt, a cautious application of ſtimulants is required; the blood alſo muſt be ſpared, and none of it muſt be ſuffered to eſcape from the umbilical chord. In the ſecond, the child is capable of enduring ſtronger ſtimulants, and according to circumſtances and the well known ſigns which announce an accumulation of blood towards the head, a little blood may be taken from the umbilical chord; but in this operation, too much caution cannot be employed, as new born children cannot bear the loſs of much blood. But the object here is, not ſo much to leſſen the maſs of the blood, as to make a derivation to prevent the congeſtion of too much of it in individual parts, and thereby to excite circulation.

The ſymptoms of both caſes are well known. We muſt not, however, depend on external ſigns alone, but examine the previous circumſtances during the pregnancy and delivery of the mother.

§ 494.

In the firſt caſe, where a deficiency of the vital principle, or rather of irritability, is ſuppoſed, we obſerve a pale wrinkled face, blue lips, and flabby limbs. During pregnancy the mother experienced various

ſymptoms of debility; found herſelf indiſpoſed; ſuffered from deep rooted diſeaſes of the lymphatic ſyſtem; uſed bad undigeſtible food, and was ſubject to the whites, or to violent menſtruation. Perhaps to this was added improper medical treatment, unneceſſary and repeated bleeding, purgatives or emetics; all which gives reaſon to ſuppoſe that the fruit muſt have been badly nouriſhed. In the ſecond caſe, where the vital principle or irritability is merely oppreſſed, we obſerve the natural colour of the ſkin, and ſometimes broad blue ſpots on it; a conſiderable warmth of the body; pulſation of the vein in the umbilical chord; the face red and ſwelled up, and the eyes ſometimes projecting as in the caſe of plethora. The mother found herſelf well during pregnancy, and ſuffered from no deep-rooted diſeaſe, &c.

§ 495.

We ſhall now take a general view of the treatment of new born children. The mode of proceeding, in regard to apparent death, is ſo well known that it is needleſs to repeat it. I here mean that ſtate where, on account of the functions of breathing and circulation being oppreſſed, there exiſts an apparent want of life. In the ſtate of aſthenia, the treatment of which is here given, there does not ſo much exiſt apparent lifeleſſneſs, as a weakened and confined ſtate of the vital functions, ſo that life is in a certain bound ſtate. The object then is, to call forth the vital principle, and to remove the impediments to its activity.

Life in this ſtate is too weak to become perfectly active till the impediments are removed; or rather without

without the aſſiſtance of art it would again ſoon diſappear.

§ 496.

The principal means for maintaining the feeble life of new born children is warmth, while on the other hand, cold is death to them; changing them from cold to heat, however, is particularly prejudicial. Care muſt therefore be taken not to expoſe them to the air immediately after the warm bath. A child, as ſoon as it comes from the mother, muſt be wrapped up in warm clothes, or put into a warm bed. If it be weak, it muſt be placed in a bath of tepid water, to which a little wine has been poured. Bathing in wine alone, is too benumbing for feeble children. Great care muſt be taken that the bath be not too hot, becauſe heat debilitates as well as cold.

The activity of the vital principle muſt be farther excited by gentle friction; but in caſes of premature birth, where the epidermis is exceedingly delicate, this proceſs muſt be performed with the utmoſt caution.

The warmth muſt be inceſſantly maintained, becauſe every time a new born child is expoſed to cold, even after the end of ſeveral days, it is prejudicial. The degree of warmth to be applied muſt, as far as poſſible, be equal to the natural warmth to which the child was accuſtomed in the womb. Heat muſt be avoided; the heat of a ſtove, by which the air becomes corrupted, is particularly hurtful. A good method of communicating warmth to a feeble child is to place it in the body of a newly killed animal.

It will be of benefit alſo if the child be put to bed with a perſon in ſound health.

§ 497.

The miſchief which ariſes from the application of ſtrong ſtimulants, at the period of recovering from apparent death, has been already mentioned, (§ 87.) and the caſe here is exactly the ſame. Nothing is more capable of extinguiſhing the commencing life in a moment. Strong ſtimulants, ſpirit of ſal ammoniac, and the like, are at this period moſt dangerous. I am acquainted with inſtances where they deſtroyed all hopes of commencing life.

The object in view may be accompliſhed by careful attention to the different affections. The feeble eye muſt be ſcreened from the light, and the feeble ear muſt be ſecured from violent noiſe. The thorax muſt be freed from phlegm by two ſmall tea ſpoonfulls of the juice of ſquills; if ſymptoms of greater debility, apparent lifeleſſneſs return, gentle ſtimulants may be uſed, but during the application of them the neceſſary warmth muſt be maintained.

All violent agitation muſt be carefully avoided, and by ſecuring reſt to the child, nature muſt be allowed time for reſtoration.

§ 498.

2. TREATMENT OF FEEBLE CHILDREN.

It is a great miſtake to give feeble children a continually feeble education; to ſhut them up with the moſt anxious care in a warm apartment; to guard them againſt every change of the weather, and under

an apprehension that they may be hurt, to suffer their powers to become inactive for want of exercise. (§ 216.) In this manner the debility and weakness are nourished; though it is now rather time to repair the previous faults of education, and to harden the body. This hardening costs at first some labour. It is a cure which cannot be effected without certain sacrifices and disagreeable sensations; but it is the only method to restore health, and prevent debility during life. Attention, however, must be paid to the state of the vital principle and the organization. Provided the child is not too much weakened, and if the organic parts are not already injured, we may venture much farther, and proceed sooner to changes in regard to air and nourishment. In general, the whole previous perverted education must be changed, and a more consistent and uniform mode of treatment must be followed. We must not undertake single improvements, which, on account of their not corresponding with the other debilitating treatment, would be prejudicial; but the whole mode of life must be changed and improved. Of what use is it to turn out a delicate child barefooted among the snow, if at other times it be kept in a nursery filled with warm vapours?

§ 499.

Care must be taken not to fall into the other extreme, by following too cold a mode of treatment, &c. The transition to the strengthening hardening mode of education must be made gradually, and with constant attention to the existing powers.

§ 500.

The chief point is to guard againſt the previous debilitating cauſes. It is a common but a miſtaken notion, that every thing is to be expected from direct corroborants, ſuch as the cold bath, wine, rich ſoups, ſtrengthening medicines, and at the ſame time to neglect removing the cauſes which alone would effect a cure. A tranſition to a more healthful mode of life will alone reſtore the loſt powers. The fear that weak children would not endure ſtraining and exerciſe of the powers neceſſary for that purpoſe is totally groundleſs. The pooreſt and moſt debilitated children become ſound and active when they learn ſome trade connected with motion and exerciſe of the bodily powers.

§ 501.

The ſtrengthening method muſt, as far as poſſible, be free from all conſtraint. A certain natural, well ordered freedom, allowed to children during their gymnaſtic exerciſes, in regard to bodily labour, and bearing heat and cold, will promote this end imperceptibly, which will be ſupported alſo by example, and that emulation excited in the ſociety of childiſh life.

§ 502.

One thing in particular, which requires improvement, is the mode of feeding children hitherto employed, and which is a principal cauſe for maintaining their debility. A child which comes into the world feeble has the more need of being nouriſhed

by a ſound mother or nurſe; for the weakeſt digeſtive power can bear milk drawn immediately from the breaſt. On the other hand, it is abſolutely neceſſary, if the mother or nurſe is unſound, attacked with any chronic diſeaſe, or highly irritable, and ſubject to violent paſſions, that the child ſhould be removed from her. Care alſo muſt be taken to provide the child with good ſound nouriſhment, which however muſt be given in moderation. Animal food and wine are only relative corroborants. In all caſes of feebleneſs there is great irritability, which muſt be excited and maintained in a moderate degree, but which by a relative exceſs of ſtimulus becomes highly pernicious. Wine may be conſidered as a medicine for feeble children, and when given in moderation promotes digeſtion, prevents the accumulation of worms, and excites a greater activity of the vital principle; but brandy and other ſpirituous liquors are poiſon to them. Animal food is nouriſhing, but in a relative exceſs too irritating. Children fed merely with animal food acquire a blooming appearance, and are full of blood, but irritability and an inflammatory diatheſis are thereby immoderately increaſed, and indirect debility is excited. They are readily attacked by inflammatory diſeaſes, are liable to a putrid ſolution of the juices, and often die ſuddenly when ſuch an event is not expected. Animal food, however, is an excellent ſtrengthener of feeble children, when the following rules are obſerved: 1. To give animal food as an addition to vegetables, in order to improve their acidifying quality. 2. To give children before they have teethed only ſometimes a little meat ſoup, freed from all fat.

The beſt nouriſhment for feeble children is MILK. I have ſeen exceedingly weak exhauſted children recover their ſtrength merely by drinking milk every day. The milk is much better when taken immediately from the animal. If it can be drunk the moment after it has been milked, it is far preferable. I once ſaw a child of a year old, exceedingly weakened, and reduced almoſt to a ſkeleton, which voided all its food undigeſted, had a ſwelled belly, and ſcreamed continually, reſtored to health by carrying it ſeveral times a day, at certain hours, to the cow-ſtall, and ſuffering it to drink milk from the veſſel into which it had been milked. To prevent the milk from growing cold, it was previouſly warmed, and then kept immerſed in hot water. As this kind of nouriſhment was at laſt too fattening for the child, I ordered a portion of boiled water to be poured into the milk, warm as it came from the cow.

When milk cannot be obtained in this manner, give the child to drink a mixture of milk and water, which has been gently boiled. The milk, however, muſt not be boiled too much, but only parboiled, elſe it will loſe its beſt parts.

An excellent kind of nouriſhment is ſweet whey prepared according to HUFELAND'S preſcription.* It contains the nouriſhing volatile parts of the milk without the ſmalleſt portion of acid. In conſumptive diſeaſes, and diſeaſes where no other nouriſhment can be endured, I have ſaved the lives of children for ſeveral weeks by theſe means.

BEER is nouriſhing and ſtrengthening for feeble children, but it muſt neither be too ſtrong nor too much

* Bemerkungen über die blattern um Weimar. 1793. p. 354.

much hopped. Hildebrand* recommends good beer ſoup, prepared with the yolks of eggs, for breakfaſt. The beer muſt be a good vinous ſort: bitter beer when boiled has an unpleaſant taſte. The yolks of eggs muſt be carefully mixed, that they may not curdle.

§ 503.

The powers, if not put into ACTIVITY, become relaxed. Children have naturally a great propenſity to motion and activity; a great deal is done when this natural propenſity is not checked, but it muſt be properly directed to call forth the powers by exerciſe. It is a capital fault in education, that in regard to girls ſo little care is taken to make the bodily powers expand. Dr. LETTSOM† complains, that in many ſeminaries of education near London, where the play grounds are too confined and not ſufficiently airy, intermittent fevers and diſorders of the breaſt are exceedingly common among the children, whereas in the country ſchools theſe diſeaſes ſeldom occur, and not a ſingle child dies in the courſe of ſeveral years. Bodily exerciſes for feeble children muſt be gradually increaſed, and they muſt be entirely free from the leaſt conſtraint. It will be attended with the moſt advantage if they are performed in the open air.

§ 504.

CLEANLINESS is an excellent corroborant, the utility of which may be conceived from the importance of the organ of the ſkin. Dirtineſs is often the ſole cauſe

* Hufeland's Journal der pract. heilk. III. part 1. 43.

† Hints reſpecting the Chloroſis of boarding-ſchools, London, 1795, p. 11.

cauſe of the continuance of debility. Is it poſſible that bathing and waſhing can be too much recommended? Children, in the firſt period of their age, ought to be bathed in tepid water, then in cool water, and when they have attained to the age of three or four, in cold, but not ice-cold, water. The obſervations already given in regard to bathing (§ 453.) may here ſerve as a guide. The cold bath has been recommended unconditionally as a corroborant for feeble children, and people, without reflecting on the painful ſenſation thereby occaſioned, plunge them into ice-cold water. This is an unfortunate imitation of the Engliſh, to whom indeed, with their mode of life, heating and irritating nouriſhment, animal food and wine, the cold debilitating bath ſerves to carry off the immoderate irritability, and has a negative ſtrengthening action. But how can this weakening remedy be employed in the direct debility of our children? The weaker children are, the leſs they can bear the cold bath, as we obſerve at the period of expanſion in childhood or the time of teething, when many cannot endure even the cool bath.

§ 505.

The caſe is different in regard to ſpeedy waſhing with cold water (§ 462.) where the cold acts merely as a ſtimulant; and yet when applied to feeble children it muſt be done only with cool water.

§ 506.

The powers of feeble children muſt not be too much ſtrained by being lifted and carried, or by too early walking. By theſe means diſlocations, fractures of

of the bones, and crookedneſs of the ſpine, may be eaſily occaſioned. The general cauſe of deformity is debility of the ſolids, the great ſoftneſs and pliableneſs of the bones: accidental cauſes are external violence, falling from a height, an unnatural poſition of the body by ſitting and ſtanding crooked, or by lying obliquely in bed. Fractures readily ariſe from great relaxation of the ſolids and muſcles.

§ 507.

The clothing of children muſt be wide and not too warm: furs and warm covering for the head are improper.

One great object of attention muſt be to provide for them an airy, clean ſleeping apartment. Care muſt be taken not to irritate them or to put them in fear, by which they might be thrown into convulſions. On the other hand it will be neceſſary to promote youthful cheerfulneſs by company, the uſe of free air, and lively amuſements. Nothing is more pernicious than to ſtrain the mental powers of feeble children. The chief care, at this period, muſt be the body, that the organ of the ſoul may be preſerved in a good condition.

§ 509.

It is often impoſſible to reſtore health to feeble children, but by ſending them to the country, where they may enjoy free air the whole day, take proper exerciſe without reſtraint, and uſe a ſound, unadulterated milk diet, &c.

§ 510.

§ 510.

The art of maintaining feeble life in childhood consists in a great measure in dætetic regimen, which must be supported by medical assistance. HUFELAND* has given us excellent observations on the nature of childhood, and the peculiar progress of the diseases of children. The constitution of the period of childhood is, on the one hand, irritability unnaturally exalted, and on the other great relaxation and debility in the power of action of the organs. We observe, therefore, in that period, a disproportion between action and re-action. The organs are partly incomplete and imperfect in their conformation, and partly deficient in the necessary cohesion and density; individual organs are more or less completely formed than others; and yet nature is occupied in this business of conformation, and thence arises in some of the organs a particular accumulation of juices, a greater confluence of the power of formation, a particular irritability and sensibility. All these phenomena we find in the asthenic state in a very high degree, when to the natural debility of childhood there is added an excited artificial or accidental debility. This renders great care and attention necessary in the treatment of the diseases of children, I shall therefore endeavour to furnish a few hints for the treatment of the asthenia of childhood, and to point out those cases in which the treatment ought to be different.

The unnaturally exalted irritability must be lowered, without weakening, at the same time, the power of action in the organs, and therefore mild, emollient means for children are to be preferred. The best are

* Bemerkungen über die blattern um Weimar. p. 292.

milk

milk and mucilages, as nothing tends more to repair the great waſte of the nouriſhing parts and the loſs of the fluids, occaſioned by the great activity of excretion and ſecretion; nothing alſo is more proper for moderating the acridity of the juices which thence ariſes. Theſe means accompliſh the end much better than the narcotic, as they ſtrengthen rather than injure the debilitated organic parts. But where the irritability is extremely violent, the latter are indiſpenſably neceſſary, in order that by a greater ſtimulus the weaker exiſting ſtimulus may be ſuppreſſed. But of theſe the milder and weaker are to be preferred to the real opiates. They may be combined very properly with ſoftening, gelatinous, oily medicines, by which their prejudicial action on the organization is prevented. They may be employed alſo internally in injections and fomentations with more certainty of effect than internally, and their operations may be ſeconded by the tepid bath and means proper for producing a derivation, &c. For internal uſe therefore, camomile, valerian, muſk, flowers of zink, and ſaffron, are the fitteſt.

The doſes of theſe medicines for children muſt be adjuſted with great accuracy. In large doſes, or when long continued narcotic medicines occaſion ſtupefaction, hebetude, apoplectic affections, loſs of memory, and idiotiſm. It is exceedingly difficult to determine exactly the proper quantity. In certain caſes the phyſician muſt be guided by experience and his own ſagacity.

Care muſt be taken alſo to maintain the neceſſary activity of the vital principle, and a good ſtate of the organic parts. In children, the vital principle is weakened

weakened in a very high degree; its activity is confined, and the organic parts are easily injured. Now to guard against the total departure of the vital principle, every thing that tends to weaken it must be avoided. Strong laxatives and emetics, and long continued evacuation, are on this account much to be dreaded, though sometimes, on another account, as shall be shewn hereafter, they are requisite at this period. They must not be employed in such quantity as to weaken the vital principle or injure the organic parts themselves, but merely with a view to remove the impediments to the free activity of the vital principle. They must never be employed in such a degree as to produce exhaustion: to guard against this bad effect corroborants must occasionally be applied.

§ 511.

The application of stimulants and corroborants is particularly proper for childhood. By these means we endeavour to support the activity of the vital principle. In children, a greater activity of this principle is required to maintain the business of absorption, resorption, and nutrition. Obstructions, congestions, deranged formation of organic parts, cachexies, rheumatism, and glandular swellings, never take place more readily than in children when this activity is impeded. For this reason they are so much benefited by warmth, which, however, must never be carried too far; and hence the sudden application of the stimulus of cold, washing with cool water, is so strengthening. Among the corroborants are cinchona, wine, bitter extract. The use of these direct corroborants must be confined merely to those cases when they are required

required by the weakened ſtate of the vital principle. Nutritive means are alſo in the aſthenia of children abſolutely neceſſary.

§ 512.

On account of the unequal activity of the vital principle, and the ſo different ſtates of individual organs, means which increaſe or leſſen the activity in individual organs are of great utility; and hence local means, and ſuch as produce a derivation, veſicatories, and cataplaſms of muſtard, are ſo effectual to leſſen the exalted irritability of the ſuffering organs, by exalting that of remote organs in conſequence of their conſenſus. Hence alſo the utility of external corroborants, fomentations of cinchona, waſhing with wine, and particularly the bath.

§ 513.

The viſcidities in children, on account of the relaxation of the ſolids, and particularly of the inteſtinal canal, deſerve no leſs attention as an impediment to the activity of the vital principle, and as the cauſe of leſion in the organic parts. We muſt endeavour to remove them.

1. By throwing out the gaſtric impurities. We muſt here pay attention chiefly to the excitement, and the derivation thereby effected, but no leſs alſo to the evacuation of noxious matter, prejudicial by its corruption, which communicates noxious parts to the juices, and even by its acridity attacks the ſolids.

2. By exciting a greater activity of the vital principle, partly in order to ſtrengthen the organization, and give more activity to excretion and ſecretion, and partly

partly to guard againſt the farther accumulation of crudities. By theſe means, the neceſſary evacuation of foreign matter, which could not be effected by the ſtrongeſt detergents, will take place of itſelf. But we ſhall do wrong if we attempt to accompliſh this end merely by ſtimulants and corroborants; both indications muſt be united.

II. Treatment of the Asthenia of old Age.

§ 514.

Old age is of itſelf a ſtate of debility and feebleneſs. The vital principle is not only confined in its activity, but is alſo deficient, and the organization has become unfit for the purpoſes of life. This ſtate would ſoon conduct to the grave were not the conſumption of the vital principle leſs in old age. It is poſſible to ſupport ſinking nature by means of art, and to prolong feeble life in this period. Socrates compared old people to drooping plants; they are refreſhed by dew, but violent rain promotes their ſpeedy decay.

Old people muſt avoid violent mental affections; great and overſtrained activity of the powers of the ſoul: their greateſt enemy is cold. All ſudden changes, abrupt tranſitions from one extreme to another, and all changes which make no impreſſion at another period of life, are pernicious. Violent exerciſe fatigues and exhauſts their powers; all ſtrong ſtimulants excite an irritability that debilitates the vital principle, by which their life is ſhortened; though their general ſenſation for common ſtimulants is blunted as ſoon as theſe ſtimulants are perceived by them, they exerciſe an action exceedingly violent. They are much weakened by evacuations through the ſkin,

or

or return if they are diſproportioned to their powers; but nothing is more pernicious to old people than violent bleeding.

Warmth is the element of old age. The more natural, internal heat is deficient, the more muſt this want be ſupplied and preſerved by external calefacients. Warm clothing, a warmer climate, and a warm apartment to reſide in, are the more beneficial to old people, as they ſhew a deſire for them.

Old age requires REST, moderate activity, and leſſened exerciſe of the powers. A certain activity, however, eſpecially if people have been accuſtomed to it in their youth, is, in feeble age, a mean of prolonging life, were it only the uſe of the ſpiritual or bodily powers, but no fatiguing oppreſſive labour muſt be undertaken. The increaſing aridity and hardneſs of the fibres muſt, as far as poſſible, be leſſened by emollients*; and hence the great benefit of the tepid bath and unction already recommended. Moderate ſtimulants are required to maintain the activity of the vital principle, becauſe with the decreaſe of this activity, the ſuſceptibility of the organization for life is gradually loſt; hence, wine is ſo ſalutary for old people. To maintain the powers and ſtrengthen the body is the principal object; and this object will be accompliſhed by choice, digeſtible, juicy food, meat ſoups, broth, &c. Milk affords excellent nouriſhment for old people. Human milk, drawn im-

* Senectutis marcorem impoſſibile eſt ſolvere, juvari autem ut in longum differatur poteſt, et hæc quidem fomenta ſenibus parans medecinæ pars illa eſt quæ ſcopum habet ſiſtere et cohibere quantum poſſibile, ne deficcetur corpus cordis in tantum ut laborare deſinat. *Galenus de Marasmo.*

mediately from the breaſt; and in the next place, aſſes milk, or milk in general, if drank when newly milked (§ 411). It is of importance alſo to maintain cheerfulneſs; a placid agreeable frame of mind, pleaſing hope and joy, a retroſpective view of the paſt, and ſweet care for the future, are the means of enlivening old age; alſo the company of young perſons, attention to children, by whom old people are ſo naturally attracted, and in particular the ſociety of young females, who, as ſome pretend, have a phyſical influence over old age. The ſleeping of old perſons with young women, preſcribed by ſome as the means of prolonging life, we do not recommend, and wiſh to confine their intercourſe merely to converſation.

From what has been ſaid, we may eaſily deduce thoſe indications which the art of the phyſician requires for maintaining feeble life in old age. The healing art, as applicable to old age, depends on the ſame principles as the treatment of children, viz. maintaining the powers by gentle ſtimulating and ſtrengthening means; guarding againſt every thing that ſtrains or exhauſts; ſoftening the dry rigid fibres; producing a derivation of the congeſtions in individual parts; the application of local ſtimulants; and, in particular, attention to preſerve a good ſtate of the organ of the ſkin, and of the ſtomach, &c.

The ſtate of feeble old age is compared to that of convaleſcents, after ſevere diſeaſes; and, therefore, an illuſtration of theſe different points will be found under that head.

III. TREAT-

III. Treatment of asthenia after diseases.

§ 515.

The object here is not ſo much to effect a direct reſtoration of the loſt health, as to render this ſtate leſs dangerous for the duration of life; and, therefore, under the debility which follows diſeaſe we comprehend both an approach to health, or convaleſcence, and an increaſing deviation from health. We muſt here take into conſideration the previous diſeaſe. ſtill exiſting, though in a leſs degree; its nature and duration; how far it affects the vital principle, or the organization; whether it be ſthenic or aſthenic; what organs have particularly ſuffered, &c. We muſt attend alſo to the conſtitution of the patient; the ſtrength or weakneſs of his body; and alſo to his condition in the ſound ſtate. We muſt enquire what the diſeaſes were with which he was before attacked; whether they were cured radically, or merely ſuſpended by palliatives; under what circumſtances and relations the patient lived; what trade or occupation he followed, &c. When we have examined theſe and ſeveral other circumſtances, we may then form a real idea of the exiſting aſthenia. The debility which remains after diſeaſe is properly prolonged diſeaſe, and requires the greateſt attention to guard againſt a relapſe, or to extirpate the remaining morbid diatheſis. The depreſſed ſtate of the powers renders the application of the ſtrengthening method neceſſary; where this is neglected, remains of the diſeaſe are ſtill left behind, the equilibrium of the powers which has been deranged is not completely reſtored, and obſtructions will be the conſequence. Individual organs, which

have been chiefly weakened by the diſeaſe, will form receptacles for new maladies; they will afterwards be chiefly attacked when any new diſeaſe takes place, and their feeble ſtate will have the worſt influence on the whole organization. Hence ſo many affections of the ſtomach, and of the organ of the ſkin, after diſeaſes which have been imperfectly cured.

But however neceſſary it may be to ſtrengthen the vital principle, and the organization after diſeaſes; to put the one into moderate activity, by animating means and ſtimulants, and to give the other, by corroborants, more coherence, and a better mixture of component parts, the ſtimulating, ſtrengthening method, if employed unconditionally and in exceſs, is pernicious. In that caſe it exalts the irritability in an immoderate degree; haſtens, by theſe means, vital conſumption; and even, by immoderate activity, injures the organs, (§ 232—§ 362—§ 398). The immoderate irritability ends in hebetude and inſenſibility, and the conſequence is lameneſs of the organs, and ſometimes incurable maladies. Let us now only reflect on the improper application of narcotics, opiates, heating eſſences, wine and brandy, eſpecially when uſed to exceſs after diſeaſes. In vain ſhall we expect ſtrength from them; the conſequences will rather be derangement of the criſes, inflammation of the ſtomach or lungs, congeſtions of the blood in the head, and therefore apoplectic affections.

The whole art of treating aſthenia after diſeaſes conſiſts in endeavouring to maintain a moderate degree of the activity of the vital principle; now ſo far as the object in view requires, ſtimulants and corroborants muſt be applied; but at the ſame time all impediments

pediments to the activity of the vital principle must be removed, whether arising from an excess or deficiency of excitement. Expelling foreign pernicious matter from the body belongs to the same head; and hence, in many cases, the necessity of evacuation.

But when nature or the vital principle is not sufficiently active of itself to remove these impediments, and to expel crudities, &c. it must be assisted by proportionate stimulants and corroborants, without which it would always be hazardous to employ even the necessary evacuants.

Medicines employed to expel crudities will be far more effectual, and in much smaller doses, if the activity of the vital principle has been excited to promote their critical operation. Sometimes this critical evacuation of foreign matter takes place by vomiting, stool, or perspiration, merely by exciting the activity of the vital principle. The long wished-for evacuation, by stool, or through the skin, will be accomplished when the spasmodic affection, which kept back, as it were, and confined the noxious matter, is removed. But it must not be imagined that this end can always be obtained merely by the action of stimulants on the vital principle.

Let it be our chief care to maintain the vital principle in those debilitated by disease, and to prevent its consumption: we must consequently guard against immoderate stimulants, and every thing that depresses the activity of the vital principle below that degree which is necessary for maintaining life. Nothing, therefore, can be more pernicious, after diseases, than violent evacuation, excessive bleeding, &c. except in the case when it serves to remove impediments to vital activity.

it is a miſtaken notion that people muſt conclude every diſeaſe with evacuation, either upwards or downwards, as for the moſt part moderate corroborants might be applied with much greater propriety.

Diſeaſes leave behind them immoderate ſenſibility and irritability, ſo that patients are affected in the moſt violent manner by ſtimulants, by every thing that excites mental emotion, and by ſmall doſes of ſtimulating medicines; and on that account they are in continual danger of a relapſe. To leſſen this evil ought, therefore, to be one of the principal objects of the phyſician. This may be done by mild ſedatives, among which tne warm bath deſerves the firſt rank. To this head belong alſo vegetable mucilages, milk drawn immediately from the breaſt, ſweet whey, thin meat ſoups free from fat, &c. Alſo moderate exerciſe, exhilarating the mind, the uſe of open, pure, dry and moderately warm air. It will be neceſſary, above all, to avoid violent ſtimulants, violent paſſions, agitation by overſtrained exertion, highly ſeaſoned food, and ſpirituous liquors.

Our attention muſt be chiefly directed to the ſtate of the principal organs—the lungs, the ſtomach, and the ſkin.

We can, however, give only general preſcriptions; for if we ſhould venture to eſtabliſh rules for individual caſes, it is to be apprehended that we might be miſunderſtood. A great deal will depend on the method before employed when the diſeaſe was at its height, as from the conſequences rules muſt be deduced for the treatment of the ſtate of convaleſcence. If the debilitating method, bleeding, and abundance of evacuants, have been employed, more caution will be required

quired in the application of the ſtrengthening method: only moderate and gradually increaſed doſes of ſtrengthening and ſtimulating means can be admitted. Such patients find themſelves in the ſtate of thoſe who, after having been famiſhed, kill themſelves by a ſurfeit. The pernicious conſequences of the uſual mode, firſt to employ exceſſive evacuation, and then ſtrong doſes of cinchona, have been already ſhewn by Roſchlaub*.

The moſt important point is to take care that nature be not diſturbed, and that the criſes be not ſuppreſſed; that new affections and diſeaſes be prevented; that the tranſition from one diſeaſe to another be carefully obſerved; and in particular, that ſalutary affections, which convey as it were the morbid matter to external parts, be not improperly treated. I hope I ſhall be pardoned for uſing the term SALUTARY: without admitting a peculiar ſalutary power in nature; may we not call out-breaking, or ulcers, or eryſipelatous inflammation, under which a malignant fever diſappears, relatively ſalutary?

TREATMENT OF THE INTERVALS OF DISEASES.

§ 516.

The intermediate times or intervals in diſeaſes, which make periodical pauſes, are the more employed for ſtrengthening feeble nature, as during the paroxyſms the direct treatment cannot properly be applied. In theſe intervals, the greateſt effect is to be expected from medicines, as the body is then propereſt for receiving them. But it is of great importance in this method to pay attention to the ſtate of the powers.

* Pathogenie, § 1300.

In the aſthenic ſtate, which exiſts in particular in the intervals of chronic diſeaſes, and, in general, of all diſeaſes that attack the vital principle, debilitating means would render the enſuing paroxyſms worſe, as they would deſtroy the reſiſtance to the morbid irritation. Small deviations from the proper regimen, catching cold, getting wet, or overloading the ſtomach, readily call forth ſuppreſſed fever. Relapſes are moſt to be apprehended in diſeaſes which diſappear ſuddenly and without good ſymptoms, and the ſooner the return the greater the danger, as the natural powers are too much debilitated by the diſeaſe, as yet ſcarcely overcome. A ſingle bleeding, or purgative, at an improper time, may change a regular tertian into a double tertian fever. Nature muſt rather be ſo far ſtrengthened that the re-action of the vital principle may oppoſe ſufficient reſiſtance to the action of the diſeaſe. Should the activity of the vital principle be too much excited by the ſtimulating, ſtrengthening method, it may readily be comprehended, that it ariſes from the vital principle being actually ſtrengthened, and that it is not unnatural irritability excited by improper ſtimulants. The next attack of the diſeaſe, however, will be ſomewhat more violent, becauſe a ſtate approaching to ſthenia has been produced by art, but the ſtrengthened vital principle is now in a condition to overcome the diſeaſe; the patient will at leaſt endure it better than where the vital principle is weak though the paroxyſms be leſs violent; but the morbid matter is not ſufficiently prepared, conſequently the equilibrium of the powers, which has been deranged, is not completely reſtored, and the evil remains in the body where it operates like a ſecret poiſon; the duration of the diſeaſe, therefore, is prolonged.

Now

Now REAL VITAL STRENGTH, to which I have before called the reader's attention, muſt be reſtored; but to accompliſh this requires great art. Particular attention muſt be paid to the impediments which prevent the activity of the vital principle. Stimulants muſt be combined with corroborants in that degree which is neceſſary for ſupporting the latter, and to give more impulſe to the vital principle. Care muſt be taken not to confound great irritability, temporary, violent activity of the vital principle, eſpecially when it is confined to individual organs (for example, immoderate activity of the organ of thought, or the organ of digeſtion) with real vital ſtrength. But in treating the intervals of diſeaſe we muſt attend not only to the vital principle, but alſo to the organization, to protect it from injury, and ſtrengthen the weakened fibres.

Our object here is not the art of healing, properly ſo called; we merely give an account of thoſe proceſſes which ſerve for maintaining feeble life. We muſt endeavour to employ the ſtrengthening method in general, as well as to ſtrengthen thoſe organs which have been particularly weakened. Moderate exerciſe, warmth, wine, cinchona, bitters, ferruginous medicines, tepid ſtrengthening baths, the power of which is increaſed by ſome addition, pure air, country life, electricity, &c. will ſerve for accompliſhing the firſt object. All theſe, indeed, are means exceedingly different in their mode of action; but we here ſpeak of their application in general. We may diſcover the proper time for this mode of application by obſerving the ſtate of the vital principle. The ſtate of the organization, whether the ſolids are denſe or relaxed,

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ſhews what claſs of means are proper; a cachectic or inflammatory diatheſis, the leſion of organic parts, &c. alſo the circumſtances and duration of the diſeaſe, the ſituation of the patients.

The more diſtant the attacks of the diſeaſe are from each other, bracing tonic medicines, ſuch as cinchona, can be employed with more certainty; but the ſhorter the intervals the more ſtimulating means are neceſſary, to maintain the vital principle in that activity ſufficient for overcoming the diſeaſe. Opium, wine in ſufficient, and cinchona in very large doſes, and particularly the uninterrupted uſe of theſe means, ſo that the effect of the firſt doſe may be ſupported by the ſecond, are proper for this purpoſe*. But I muſt remind the reader that I here ſpeak of the pure, direct aſthenic ſtate, in which the whole object is to ſtrengthen the vital principle.

The real corroborants, applicable in the aſthenic intervals, are thoſe which, while they call forth the activity of the vital principle, ſtrengthen the organization, and make it fit for being acted upon by that principle. Strong purgatives, and violent emetics, rather injure the organic parts, (eſpecially when the inteſtinal canal is highly irritable; whereas where there is great abundance of viſcous matter, ſtrong doſes of theſe medicines are ſometimes neceſſary, and in particular to thoſe who have uſed a great deal of farinaceous nouriſhment) untimely bleeding, eſpecially if carried to exceſs, withdraws a part of the maſs of

* A remarkable circumſtance relating to this point is mentioned by Kämpf, who unfortunately is now almoſt forgotten. See his Abhandl. von einer neuen methode die hartnäckigſten krankh. zu heilen. Leipſic, 1785, p. 119.

of the blood, which in aſthenia it is highly neceſſary to ſpare, and excites, beſides a decompoſition in the mixture of the juices, a change in the proportion of the fluids. On the other hand, nutritive means, meat ſoups, vegetable mucilages, repair the loſs of the juices, increaſe the connection of the component parts themſelves, and defend (as is the caſe in the flux in regard to the uſe of vegetable mucilages, ſalap root, &c.) the ſolids freed from their coating, the internal ſkin of the inteſtinal canal from leſion, and its conſequences, inflammation, and gangrene. This may ſerve for illuſtrating what has been ſaid.

We muſt ſtrengthen, by LOCAL MEANS, thoſe organs moſt attacked; ſuch, for example, as the lungs, the ſtomach, the organ of the ſkin. As many diſeaſes attack this organ at the ſame time, there is no better method than by ſtrengthening it to defend the organization, in general, from the ravage of diſeaſe,

CHAPTER VII.

PROLONGING FEEBLE LIFE IN THE SO CALLED INCURABLE STATES.

§ 517.

WITHOUT farther enquiry respecting the relative meaning of the terms, curable and incurable, as applied to disease, (§. 13.) we shall consider certain states, where the physician can undertake nothing definitive; where it is impossible for him to attack the disease by the direct method, and where he accomplishes his object, if he can maintain life for a certain period, and lessen the most urgent painful affections. Under such circumstances, a radical cure cannot be effected, as the feeble life would be extinguished before the disease could be overcome. The empiric in many cases is successful, because a far greater sum of the vital principle, than what could be supposed from external signs, is often concealed in the body, and the regular practitioner who does not venture to employ such desperate remedies, may sometimes lose a patient of this kind; but in most cases, the latter by this moderate method, gains time to examine with more accuracy, the vital power, so that he can treat the disease in the direct method, with greater certainty; and by these means, instead of one patient, whom he innocently loses, saves a hundred whom the fool hardy empiric would have destroyed.

It

It requires a very high degree of acuteneſs, to eſtabliſh a balance between the exiſting vital ſtrength, and the activity of the means which leſſen it in a certain degree; to determine this degree with the greateſt probability, and, in general, to diſtinguiſh real from apparent debility.

Even in the higheſt degree of the moſt malignant diſeaſes, it is improper for people to dwell too much on the idea of incurableneſs, leſt all hope ſhould be loſt, which would diſcourage the phyſician, and make him overlook thoſe means, different from the common practice, which might relieve his patient. Even thoſe maladies which, according to theory and experience, muſt be declared incurable, we ought not always to conſider as deſperate. While we employ every means in our power for leſſening the ſufferings of the patient, the hope, though perhaps deceitful, of being able to remove them, and to maintain life, will aſſiſt us greatly in our exertions.

To maintain the vital principle in ſufficient ſtrength, is the chief object of the phyſician; but while we increaſe the activity of that principle by the exciting method, we muſt never neglect to attend to the impediments by which it is prevented from expanding itſelf. This obſervation will teach us, that we cannot always employ the ſtimulating method, and that even the gaſtric mode of treatment, notwithſtanding the aſthenic ſtate, muſt SOMETIMES be combined with it. In employing the exciting method, we aſcertain by obſervation, whether or not there is a deficiency of re-action or ſuſceptibility of irritation; whether the vital principle is weakened or only oppreſſed. We muſt then take care, that irritability be not immode-

rately

rately increaſed, which would haſten the conſumption of life; and that a concealed morbid prediſpoſition be not called forth, or new diſeaſes and affections be excited.

When life is feeble, every thing which increaſes this weakneſs muſt be avoided; ſuch as great activity of the body or the mind, evacuation of every kind, and particularly bleeding, except in particular caſes.

Such is the ſtate which we have here to take into conſideration. To remove the cauſes, may perhaps be impoſſible. We rejoice over every day, and every hour that we ward off death in ſuch a helpleſs ſtate; and we often ſee the impoſſibility of ſaving the patient. All that can be done, is to leſſen the pain, and mitigate the moſt violent ſymptoms. This is the ſtate of great age, when the powers begin to be loſt under incurable maraſmus; or in conſumption, attended with ulcerated lungs, where organic leſion exiſts.

§ 518.

Nothing is a greater enemy to the maintenance of feeble life, than tranſitions from one extreme to another; laying aſide old habits, leaving a climate or place to which one has been long accuſtomed. The irritation occaſioned by great changes, is highly prejudicial to the debilitated. Even pernicious habits, inſalubrious air, &c. muſt be abandoned with great caution. We muſt not be too ready to believe that we can in all caſes cure debilitated patients, merely by removing them to a ſounder climate, by ſuddenly purifying the air in their apartments, or by changing their mode of life: nay, great care ought rather to be taken that we do not thereby haſten their end.

* (§ 475.)

(§ 475.) Unfortunate deception!—The phyſician is often tempted to ſubject his patients to ſuch changes from which he expects a cure. He ought rather to maintain the hope of his patient, that he may thereby accompliſh the object of his wiſhes.

§ 519.

In treating this ſtate, we remark two principal indications: 1. To retard the conſumption of the vital principle. 2. To mitigate the moſt urgent affections.

1. TO RETARD THE CONSUMPTION OF THE VITAL PRINCIPLE.

§ 520.

When we have it not in our power to ſtop the rolling wheel, we perhaps may be able to retard it, and to leſſen its velocity. We cannot prevent the progreſs of the malady; but we may retard it, ſo that life will end later than it would have done, without the intervention of art; and this even is of ſome value.

§ 521.

1. WE MUST ENDEAVOUR TO LESSEN THE TOO GREAT ACTIVITY OF THE VITAL PRINCIPLE.

a) BY REST. (§ 488.) Many people may prolong their exiſtence for ſeveral years, if they adopt a leſs active mode of life. Every thing that interrupts reſt; every thing that gives too great ſtimulus to the body or the mind, muſt be removed. Thus in violent inflammatory diſeaſes, where there is leſion of important organic parts, as for example, ulcerated lungs, reſt and tranquillity are highly neceſſary.

b) BY

b) BY MEANS FOR LESSENING IMMODERATE IRRITABILITY. These means are either directly SEDATIVE or TEND TO PROMOTE A DERIVATION. To the former belong the so called anti-spasmodics, the tepid bath, narcotic medicines, opiates. The use of these has been pointed out already. Among the latter are local stimulants, which by the greater irritability excited in some organs, lessen the irritability of others. (§ 394.)

§ 522.

2. WE MUST ENDEAVOUR TO MAINTAIN THE ACTIVITY OF THE VITAL PRINCIPLE IN THAT DEGREE WHICH IS NECESSARY FOR THE DURATION OF LIFE.

When the action of the vital principle is weak, the impediments to its activity still increase. On account of too weak resorption and absorption, crudities and foreign matters are more and more accumulated; the blood which is destitute of sufficient vitality, stagnates and forms congestions; the accumulated stagnant, and not sufficiently animated juices begin in part to die: their union is dissolved, and there arises corruption of every kind, and acridities as the first degree of corrupted fermentation has taken place. By the stimulus of the foreign matters or of the fluids, corrupted by the separation of their admixture, the solids also are attacked, and rupture of the internal skin of the intestinal canal, relaxation of the muscles, and fibres, &c. A change also takes place in the solids, according as the vital principle is more or less withdrawn from them. Such a state increases in proportion as the influence of the animating vital principle

ciple is leſſened; the natural warmth diſappears; the juices are diſſolved; the ſoft and ſkinny parts are mechanically injured, and the whole organization is deſtroyed. When the body becomes unſuſceptible of life, it is a dead maſs. The tranſitions in this ſtate are, in general, not ſudden; theſe changes take place only by degrees. Though their progreſſive courſe can no longer be ſtopped, it is however ſometimes poſſible by art to retard their progreſs. We muſt endeavour to retard the decreaſe of the vital principle in individual organs, and in particular to prevent, as long as poſſible, the unequal d ſtribution of it, and even when this cannot be done, to maintain life at leaſt in the principal organs for a certain period.

§ 523.

In general, the influence of the animating principle withdraws itſelf firſt from thoſe external organs which are at a diſtance from the principal ſources of life. The extremities become cold, and in particular the feet loſe their muſcular power, and power of motion; the activity of the organs of the ſkin decreaſes, and abſorption and excretion by the veſſels of the ſkin are carried on in a more ſluggiſh manner. It is of great benefit, therefore, for old people to keep their feet warm; and on this account ſtimulants applied to the ſkin contribute ſo much to prolong life, as they excite the activity of the organ of the ſkin. Hence friction is an excellent mean for exciting and maintaining this activity. (§ 447.)

With the decreaſe of life, we obſerve a decreaſe of activity in the principal organs: the lungs, the ſtomach, and brain; ſhortneſs of breath, deficient di-

geſtion, weakneſs of memory, from the vital principle being leſſened in the organ of the ſoul. The cauſes of this ſtate are indeed inſuperable, when the organic parts themſelves are injured, partly by mechanic leſion, and partly by loſs of ſuſceptibility for the vital principle; but we muſt endeavour to check, as far as poſſible, the progreſs of this mechanic leſion, partly by ſtrengthening the vital principle, and partly by ſtrengthening the organization. An inſtance of this is afforded by the decreaſing animation of the organ of digeſtion. In that caſe we muſt give a ſmaller quantity of food; but for that reaſon, it muſt be gently ſtimulating and nutritive; the activity of digeſtion muſt be excited by moderate ſtimulants, and particularly wine.

§ 524.

When the vital principle in incurable diſeaſes is unequally diſtributed, there ariſe, through the unfitneſs of individual organs for animation, obſtructions, congeſtions, and in general a morbid irritability in thoſe parts which contain a far greater quantity of the vital principle, by which means the corruption of one is communicated to another, and the ſtill completely animated organs are conſumed by too great irritability. We muſt therefore endeavour to keep life generally diſtributed throughout the body; to remove the debility of individual organs by tonics, and to diſperſe obſtructions. We muſt endeavour alſo by the uniform action of external ſtimulants to maintain the general activity of the vital principle. To this head belong the means for maintaining and reſtoring the natural heat of the body.

§ 525.

§ 525.

We accompliſh this end:

(a) By a moderate exertion of the powers. For this reaſon Herodicus by moderate bodily exerciſe was able to prolong ſeveral years the lives of debilitated perſons. A moderate exertion of thoſe organs which have loſt in regard to the influence of the vital power will be the fitteſt for this purpoſe. This exerciſe, according to the nature of the exiſting powers, is either active or paſſive. The degree of the exertion muſt be proportioned to the exiſting powers; it muſt never be carried ſo far as to fatigue and exhauſt; nor be continued too long, and muſt be leſſened when it has effected a greater activity of the vital principle. The powers are by far too weak to endure for a long time the action of ſtimulants.

(b) By moderate exertion of the powers in individual organs. This increaſed activity excites, by means of the conſenſus, the general activity of life in the other organs. As for example, the activity excited in the organ of the ſoul by agreeable mental ſtimulants animates the whole organization; the activity of the organs of the nerves, increaſed by nervous ſtimulants, wine, ether, &c. diffuſes general life throughout the whole frame.

The happy influence of agreeable mental ſtimulants in regard to the prolongation of life, in all caſes of debility, requires our particular attention. Cheerfulneſs and peace of mind; the ſoft ſenſations of love, joy, and hope; and the great life-prolonging power of the animating paſſions, belong to this head. It is not impoſſible by rouſing theſe animating paſſions to prolong feeble life.

(c) BY THE APPLICATION OF EXTERNAL AND INTERNAL STIMULANTS TO THE ORGAN OF THE SKIN. As by these we increase the activity of the organs of the skin, we increase at the same time the activity of other organs. Hence the great action of stimulants on the skin; vesicatories, the cautery, friction, the application of external heat by warm bodies brought in contact with the skin. Internal means also have an action on the organ of the skin to increase perspiration, by which the natural warmth of the body is exalted, and its activity increased. The choice of these means depends on the state of the vital principle and the organization—I flatter myself, that by the preceding observations the reader will be enabled to determine in what cases heating or spirituous and antimonial medicines ought to be employed for promoting this end, and how far they may be combined with cooling or narcotic substances.

(d) BY EXALTING THE ACTIVITY OF SEVERAL ORGANS AT THE SAME TIME. For this purpose external and internal stimulants must be combined: moderate exercise and the use of wine, cutaneous stimulants and internal stimulants of the stomach.

§ 526.

In this case it will be most proper to increase the activity of the organs in proportion as it is more generally excited, and the less it increases irritability beyond the natural degree. No means are fitter for accomplishing what is here required than the general tepid bath, as it restores, in an eminent degree, the natural warmth of the body, and renders the activity of the vital principle general (§ 453.)

§ 527.

§ 527.

To maintain feeble life in the preſent ſtate, it is particularly neceſſary to ſtrengthen the chief organs of life; becauſe to theſe organs the vital principle has the greateſt attachment, and we are taught by experience, that men whoſe ſtomach or lungs are only in a tolerable good condition can drag out life for a long time, notwithſtanding their aſthenic ſtate in other reſpects and the leſion of other organs. Of how much importance, therefore, to thoſe afflicted with diſeaſe are cleanlineſs and pure air; how much depends on nouriſhment, &c.

§ 529.

In the higheſt ſtate of debility life depends on external excitement, which muſt be increaſed beyond the uſual degree; the inſenſibility is ſo great, that the uſual action of internal powers is not able to put the vital principle into ſufficient activity. In this ſtate the preſervation of life is merely the work of art. The perceptible activity of life often diſappears at the moment when the action of artificial ſtimulants is ſuſpended. Sometimes ſtimulants exceedingly violent are requiſite to accompliſh this end. In this high ſtate of aſthenia, where there is a deficiency of the vital principle, this principle itſelf may thereby be ſoon exhauſted. Such violent ſtimulants, therefore, ſtrictly ſpeaking, are means which ſhorten life, and conſequently counteract what we are endeavouring to accompliſh; but as a life without activity, without enjoyment, may be conſidered as no life, the application of theſe violent ſtimulants may be admitted to

reſtore, at leaſt for a ſhort time, the full activity of life; for even this, were it only for a moment, may be uſeful to ſociety. The reader may here call to mind the anecdote of Muley Moluch (§ 314.)

§ 530.

Among theſe violent ſtimulants we may include forced activity of the organ of the ſoul by means of the paſſions. Thus ardent love is ſaid to have prolonged the life of a dying bride, till the appearance of the abſent bridegroom; and when ſhe beheld him, the exceſs of her joy enabled her to open her pale lips to addreſs a few words to him, though ſhe had been before totally incapable of ſpeech. To this head belong alſo nervous ſtimulants. The lives of dying perſons may be prolonged by wine, ether, muſk, &c. External ſtimulants contribute towards the ſame end; as friction, veſicatories, bathing, and in general all the means uſed for exciting natural warmth.

§ 531.

Where there is great vital debility, the continuance of artificial ſtimulants is indiſpenſable, becauſe on theſe life depends (§ 377.) We muſt therefore maintain calefacients (§ 444.); and the external and internal excitement muſt be repeated in ſuch a proportion, that when the action of one ceaſes, a new one may be applied. Now ſince with the ſtill progreſſive decreaſe of the vital principle, ſuſceptibility of irritation is more and more loſt, the ſtimulants muſt be increaſed and exalted; the doſes of wine or muſk muſt be enlarged, the external heat increaſed, &c.

§ 532.

§ 532.

In various incurable ſtates, the organic parts loſe their coherence and due admixture; their component parts are ſeparated the more they are deprived of animating influence. There are two ſtates of diſeaſed organization: either a ſeparation of the mixture and connection of the ſolids and fluids, relaxation and leſſened elaſticity and ſolution of the juices, or a deficiency of the fluids, deſiccation, too great denſeneſs and brittleneſs of the veſſels.

In the firſt caſe we muſt employ bracing, tonic remedies. Cinchona in large doſes, camphor and mineral acids, may here be employed with propriety; alſo ſtimulants which by their aſtringent quality brace up the relaxed fibres and exalt the vital activity, in order that a certain retardation, at leaſt, or a pauſe of the operation of the commencing animal fermentation or corruption, as far as ſuch can be admitted in a living body, may be effected. Hence the beneficial effects of employing cold as a ſtimulant in putrid fevers. Fomentations of wine and other ſpirituous liquors are proper for accompliſhing the ſame end. All theſe are means for maintaining feeble life in the ſtate above deſcribed.

§ 533.

A different mode of treatment is required in the ſecond ſtate of diſeaſed organization, whereby the leſſened influence of the vital principle, deſiccation of the body and rigidity of the fibres, ſtill increaſe, by which the organization is rendered unfit for animation, as in old age. We muſt here endeavour to overcome

the evil by the emollient, moiſtening method. To this head belong tepid baths, warm fomentations, cataplaſms of emollient herbs, moderate exerciſe, motion, rather of the paſſive kind, gentle friction, the moiſt vapour of warm fluids, the evaporation of animals newly killed, into the bodies of which the hardened parts are to be laid; the ſteam of warm bread, with which DEMOCRITUS procured a reſpite for his own life; the application of local emollients, ſuch as oil and greaſe to the ſkin, or in the form of injections; the uſe of mild ſoftening nouriſhment, milk, meat ſoups, vegetable mucilages, the internal uſe of freſh oil.

This ſtate of the organization indicates that the activity of the vital principle on the organization is to be maintained, and admits ſtimulants not applicable in the firſt diſeaſed ſtate of the organization, becauſe they promote ſolution of the juices. In the preſent caſe, therefore, veſicatories, electricity, &c. are proper. Alſo means for promoting a derivation: bathing the feet, the cautery, which in the former ſtate increaſes ſometimes the ſeparation of the fluids, and conſequently ſhortens life. This is the caſe in many kinds of dropſy, by the application of veſicatories, which ſometimes produce a violent exhauſting, evacuation of the fluids, which affords indeed a temporary relief, but ſhortens life. Thus nature, by the diſcharge of water from the feet, effects a derivation from the breaſt and upper parts of the body, which gives great relief to the patient. But this, in general, is the conſequence of great ſolution of the juices, of relaxation and leſion in the fibres. Hence veſicatories

in

in this ſtate occaſion the moſt violent inflammation, and in a ſhort time even gangrene.

§ 534.

When the organic parts have ſuffered leſion, great caution is neceſſary in the application of this method, that injury may not be occaſioned by excitement, and that the organization may not be weakened by leſſening the neceſſary vital activity. In this ſtate, every thing almoſt depends on the regimen. Sometimes no medicines can with certainty be applied, and nothing more can be done but to avert pernicious influences as much as poſſible, and to remove every thing that increaſes irritability.

Under organic leſion, in this ſtate, we underſtand the deſtruction of organic parts; ſeparation of their admixture or the loſs of their ſubſtance. Inſtances of organic leſion are a high degree of inflammation, gangrene, caries of the bones, cancer, ſchirrous ſwellings; alſo the before mentioned caſe of the dropſy, where irritation by means of veſicatories is ſo pernicious. Under ſuch circumſtances the prolongation of life requires:

1. GENERAL TRANQUILLITY, peace of mind, a ſituation free from interruption, and the guarding againſt violent bodily motion. Hence in phthiſipneumony, where one of the chief vital organs is expoſed to deſtruction, violent motion is prejudicial, and tends to ſhorten life.

2. SEDATIVE, IRRITATION-LESSENING MEDICINES. Theſe are employed different ways.

(a) GENERALLY, for leſſening the immoderate irritability of the organization in general. By theſe means the great irritability, and the determination of the juices towards the injured organs is leſſened.

(b) LOCALLY,

(b) LOCALLY, applied chiefly to the ſuffering organ. To this head, belong, in particular, external means, which in a high ſtate of aſthenia are much more certain in their effect than internal. Who is not acquainted with the utility of opiates and mercurial remedies, applied externally for internal and external inflammation?

(c) AS MEANS FOR PRODUCING A DERIVATION applied on a remote organ in order to leſſen thereby the too great irritability of the ſuffering organs. This is a method highly beneficial, and attended with great certainty. To this head belong bathing the feet, veſicatories, the cautery, friction. Stimulants may be applied in this manner, with great certainty, as by the irritability excited in other organs, that of the ſuffering organs is leſſened.

§ 535.

An important method of leſſening immoderate activity of the vital principle, particularly in individual organs, is TO ENDEAVOUR TO GIVE TO THIS ACTIVITY MORE DIFFUSION, MORE ROOM FOR ACTING IN. The greater the number of the organs which participate in this activity, the more extenſive it acts, and the more it loſes in regard to that pernicious intenſive action, which gives reaſon to apprehend the deſtruction of the immoderately ſtimulated organ. This is particularly the caſe when ſuch immoderate excitability relates to an organ highly ſenſible, and abſolutely neceſſary for the duration of life; as for example, the lungs, the ſtomach; the conſequences are inflammation, ſuppuration, decompoſition of organic parts. This leſſening of the intenſive immoderate activity of the vital principle is effected.

(a) BY A GENERAL MODE OF TREATMENT: the application of the uſual means for leſſening irritability; air which contains leſs oxygen, the tepid bath, medicines that promote perſpiration.

(b) BY EXCITING OTHER ORGANS by which the vital activity is more diffuſed. Veſicatories, therefore, are proper for this purpoſe.

According to this method immoderate activity of the organ of the ſoul is leſſened by phyſical remedies; bathing, changed temperature of the air, exerciſe, &c. Immoderate activity excited in the organ of the ſoul by violent paſſions may be leſſened by giving the paſſionate emotions more room to be diffuſed.

This practical indication may ſerve to illuſtrate the utility of ſtimulants applied to the organ of the ſkin, in order to effect a derivation of the noxious immoderate irritability of the interior organs to the external. In phthiſipneumony therefore, during the whole diſeaſe veſicatories kept in a ſtate of ſuppuration are of ſuch benefit to leſſen the cough and expectoration, and to promote ſleep.

§ 536.

If the malady be incurable, we may contribute a great deal to the prolongation of life, by ſparing and maintaining the powers as much as poſſible; by carefully guarding, on the one hand, againſt every thing that debilitates the powers, according to what has been already ſaid, and by continually endeavouring on the other to repair what has been loſt. It is ſometimes, however, exceedingly difficult to effect this reparation, either on account of the great weakneſs of the vital principle, when aſſimilation and nutrition are conſequently

quently carried on in a very weak manner, or on account of the organic leſion of organs deſtined for receiving and preparing the nouriſhment, as for example in the caſe of ſcirrhoſities of the ſtomach or of a locked jaw. In theſe ſtates we muſt endeavour to exalt the activity of the vital principle by ſtimulants, and thereby to promote aſſimilation and nutrition; or to remove the leſion of the organic parts, and, in the laſt place, to prepare the nutritive matter in ſuch a manner that notwithſtanding theſe impediments it may be received and aſſimilated in a certain meaſure, and when it cannot be introduced into the body in the uſual manner, we may accompliſh our object by various other methods (§ 482.)

§ 537.

AIR is a real *pabulum vitæ*, nouriſhing and ſtrengthening (§ 53.) Nutritive matter is conveyed to us alſo through the atmoſphere, and from this principle we may explain why animals without further nouriſhment can exiſt longer in one kind of air than in another. Too dry air, overcharged with caloric or oxygen, conſumes quicker than moiſt air mixed with more hydrogen. It is hydrogen that contains the nutritive parts in the atmoſphere. Plants may be preſerved a long time in water without earth, and in moiſt air they may be kept freſh a conſiderable time, even when ſeparated from their roots; whereas in dry hot air they would ſoon die. In the like manner during rainy weather they may be maintained freſh at the window, though a drop of rain does not touch them.

The reſult that may thence be drawn for our preſent purpoſe cannot be unimportant in regard to the air to which

which patients are expoſed. In the moſt incurable diſeaſes we may, by theſe means, contribute to prolong life, either by expoſing the patient to air proper for him without doors, or cauſing him to inhale in his apartment an artificial gas of the ſame kind, with which the whole chamber may be filled. (§ 465.) In this proceſs, attention muſt be paid to the principles already laid down. With this view the hydrogen may be increaſed, and according to the ſtate of the irritability, whether deficient or in exceſs, may be mixed with more or leſs oxygen.

In many diſeaſes this purpoſe perhaps might be anſwered by a machine, contrived for pouring out a conſiderable quantity of water, which would increaſe the oxygen of the air without injuring its purity. This proceſs cannot be ſupplied by warm vapour, which indeed renders the air damp, but leſſens its purity, is at the ſame time highly ſoftening and relaxing, increaſes the heat and uneaſy ſenſations, and calls forth too violent perſpiration. How refreſhing and animating, on the other hand, is the air in the neighbourhood of a water-fall. Cold water has the greateſt tendency to purify the air. Neither can the place of this experiment be ſupplied by bathing, becauſe the hydrogen in conjunction with the other component parts of atmoſpheric air exerciſes a totally different action on the ſurface of the body, and beſides this is taken in by the lungs.

§ 538.

I ſhall here offer a few obſervations on the regimen of thoſe means which have an influence on the imagination.

The

The great influence of the power of thought on the physical part of man, and its connection, however inexplicable, with the vital principle, have been mentioned before, (§ 85. § 208.) also the consensus in which the organ of the soul stands with the other organs; and we know also of how great importance the free or unimpeded action of the powers of the soul, and even their deficient or higher cultivation, are in regard to the asthenic state. (§ 227. § 490.) On these observations we may found the method of maintaining feeble life by means which exercise an action on these higher powers. This psychologic method is founded both on our knowledge of man in general, and on observations on individuals respecting their passions, temperament, character, situation, connections, and relations, compared with their bodily state, and the manner in which they are affected by all these things. Here then is a strong thread by which the already half torn thread of life may be still maintained for a considerable time.

To tranquillise the mind, and suppress all violent passions, is the chief object to be attended to in the treatment of patients. The physician, however, must be acquainted with the peculiarities of his patients, as there are many in whom the most violent passions are excited by the most trifling things. The great activity excited in the organ of the soul by the violent impressions of passion, we must endeavour to lessen partly by moral and partly by physical means. We must give to the passionate emotions more diffusion; we must endeavour to direct the attention of the patient to other objects, to combine the existing passion with other ideas, which may lessen its impression. To change

change the exiſting ideas by others requires great caution: in a high degree of aſthenia, in particular, the patient ought never to be ſubjected to ſuch a direct method of cure.

In many caſes it is of benefit merely to leſſen the violence of the paſſion, and far better than to ſuppreſs it. A paſſion moderated in this manner is often the laſt anchor to which life adheres.

While we leſſen the irritability of the organization by ſedatives that occaſion a derivation, we muſt at the ſame time lower the too exalted irritability of the organ of the ſoul, the conſequence of which will be, that the action of mental ſtimulants will be leſs violent.

To maintain a certain activity of the ſoul is an excellent mean for prolonging life, and by which the vital principle will be kept longer in activity, and in ſufficient activity, than by any other means. This activity tends more to promote life, when it has a certain object. Thus the life of old people is extended by their care for futurity, by building and collecting for their poſterity. How many, even at the point of death, have been retained in life a conſiderable time, by an anxious deſire of completing ſome particular buſineſs. The application of this circumſtance to our preſent method is eaſy.

The chief point here depends on the activity of animating exertion; and therefore agreeable as well as diſagreeable paſſions may contribute to maintain life as ſoon as the object of the paſſion intereſts the ſoul; that is to ſay, is capable of putting it into a certain degree of activity. Thus dying perſons have been kept in life two days by revenge. We muſt not, however,

however, confound with these the depressing passions which lessen the activity of the soul: such as fear and care.

More beneficial to life are the agreeable animating passions, whether the object of their exertion be agreeable in itself, or have merely an individual agreeableness. How strongly is our existence supported, even under the greatest bodily debility, by the arm of hope. Avarice, without considering it in a moral point of view, is the cause of strong life to those who are actuated by it. It increases with increasing age, and enchains to the earth the last melancholy days of man. It is sufficiently strong to keep the soul in complete activity; and its action, the more exclusive it is, acts with the greater violence, and fixes life as it were, to one point, that is money. Those, therefore, who in such an asthenic state, as that now under consideration, should attempt by violent remedies to cure or suppress the passion of avarice, would pursue very bad means for prolonging the lives of their patients.

Passions which excite an agreeable activity of the soul, either by ideas of the present or of the future, serve in a particular manner to the prolongation of life. Joy and love are these guardian angels. These agreeable passions, however, must be excited in such a degree as not to be prejudicial to life; the transitions from the one to the other must be gentle, and attended with no agitation or surprise. Joy exercises a strengthening action, as it multiplies the stimuli on the organ of the soul; either exalts the mind by the placid transition from one idea to another, or by an alternation of moderate stimuli of different kinds maintains an activity void of all straining. Nothing can

surpass

ſurpaſs the ſtimulant of love, in which ſo many agreeable paſſions are united. When it does not degenerate into extravagance, it gives employment to the ſoul, through a wide field of ideas; extends life through a hope of poſſeſſing the beloved object; and in the poſſeſſion of it, gives it a new ſtimulus, while the wiſh for a longer continuation of theſe joys, tender attachment to the beloved object, and the habit of ſuch a peaceful tranquil life in the circle of love and friendſhip, contribute greatly to the prolongation of our exiſtence, and as it were detain us longer in this world of joy.

But even thoſe paſſions which riſe to enthuſiaſm, and which fill the mind with ardent and emulous zeal, provided the vital principle is not too much weakened, nor the organs irreparably injured, may, by their great excitement, overcome thoſe impediments which confine vital activity, and thus effect a cure in the moſt obſtinate diſeaſes: of this we have ſufficient inſtances. But when the vital principle is weakened and depreſſed, and the organs are irreparably injured, ſuch violent excitement would put the principle of life into an incredible degree of activity, conſidering the ſtate in other reſpects, ſo that the patients would perform the labours of power and ſtrength, as in their ſound days, but the vital principle would by theſe means be exhauſted, and the end of life haſtened.

The power of the human mind is great, and much may be effected by reſolution in regard to the body. This reſolution, however little man may be maſter of his own life, can contribute a great deal towards prolonging his exiſtence. To this head belongs the reſolution of ſubmitting to diſagreeable privation from

things prejudicial to life and health; to uſe unpleaſant food; to endure painful operations, when neceſſary; to undertake, on purpoſe, tireſome mental labours; to ſtruggle continually againſt impediments, and thus to harden both the mind and the body. It is a great point in the art of prolonging life, to become maſter of one's diſeaſed ſenſations, by firmneſs and reſolution *. Men often ſhorten their lives by too delicate habits. In the incurable ſtate, a reſpite for life may be expected by this reſolution. It may be carried to a great extent, and by its means a man may often perform incredible things, though a little enthuſiaſm may be ſometimes combined with it. We have inſtances of men, who fixed the period of their death at a certain time, and who died exactly at the day. Nay, we have inſtances of people who, on their death being foretold at a certain hour, believed in the prognoſtication, and actually fulfilled it. If men then would employ this ſuperſtition, ſo apt to forbode misfortune, for ſomething good, and extend in idea the boundary of their life to a certain remote period, might not this be a mean for prolonging life?

How great is the confidence which patients ſometimes place in the phyſician, in medicine, and the medical art in general? Strengthened by this confidence, many ſufferings will be relieved. It is of great importance, when the patient is convinced that his phyſician will ſave him; or, if circumſtances are ſuch that a cure is impoſſible, that he will mitigate his ſufferings, and maintain his life as long as poſſible.

A certain

* Kant von der macht des gemüths durch den bloſſen vorſatz ſeiner krankhaften gefühle meiſter zu ſeyn, in Hufeland's Journal, Vol. v. Part. 4.

A certain knowledge of his ſtate, even if it ſhould be unpleaſant, is always better than an unſteady wavering mind, which promotes immoderate irritability, increaſes reſtleſſneſs, wakefulneſs, and uneaſineſs, and by theſe means ſhortens feeble life. In many caſes it is proper, even contrary to the appearance of circumſtances, to aſſure the patient that he is in no danger, as it is in other caſes, to aſſure him that he muſt die: both may tend to tranquillize the mind. A great deal, however, will depend on circumſtances, and the ſtate of the patient's mind. I have ſeen patients under the doubtful hope of life, ſoon worn out and exhauſted; while others, in the ſame diſeaſes, who were convinced that they were dying, dragged out their lives for a conſiderable time: the latter were tranquil and reſigned to their fate; beheld the approach of death with a placid eye, and on that account, life was ſlowly conſumed.

In the application of mental emotions, to prolonging feeble life, we muſt be guided by obſerving the ſtate of the vital principle. In the caſe where there is an unnatural activity of the vital principle, and, therefore, immoderate irritability, whether it be general, or relates merely to individual organs, the mild, and even the depreſſing paſſions muſt be employed, becauſe the above affections would be increaſed by violent mental emotions. In ſuch caſes, we muſt employ the agreeable, moderate mental ſtimulants of hope and joy, which muſt be inceſſantly maintained in the ſame degree. For even agreeable mental emotions, if too violent, would render ſuch a ſtate worſe. The hope of life, which accompanies conſumption, and ſtill becomes ſtronger as the diſeaſe increaſes, ſeems to

haſten the patient's diſſolution. This haſtening is increaſed in proportion as the hope of life is nouriſhed, and as the patient is flattered with the promiſe of a cure. It appears as if we ought to deſtroy hope, where it exiſts as a ſymptom of diſeaſe, and on the other hand, to endeavour to excite courage and hope, in diſeaſes which are attended with depreſſion and fear. Dr. Falconer, therefore, in his treatiſe on the influence of the paſſions in diſeaſes, aſks whether in the firſt attacks we might not ſubſtitute fear, in the room of hope, with advantage to the patient. Darwin* relates a very remarkable caſe of a conſumptive patient in confirmation of this idea.

In the other ſtate, where there is a deficiency of the requiſite vital activity, by which the duration of life is ſhortened through want of excitement, the lively paſſions muſt be employed; hope in its full activity; joy, and, in general, ſuch emotions of the mind as excite a great activity of the powers of the imagination.

II. MITIGATION OF THE MOST URGENT AFFECTIONS.

§ 539.

In ſuch caſes, when no radial cure can be attempted, great relief may be procured to the patient by mitigating the moſt urgent affections, and freeing him from pain and uneaſineſs. The exertions of the phyſician for this purpoſe will tend greatly to tranquillize the patient, and to inſpire him with confidence. In moſt diſeaſes, however, very little can be attempted, in regard to individual parts, againſt moſt affections, and

* Zoonomia, Part II.

much

much leſs can they be entirely removed. Such a mode of cure, in general, would betray the utmoſt empiriciſm. But the attempt of the phyſician to free his patient from a painful affection is highly flattering to him; and by the application of the means for mitigating a certain uneaſy ſenſation, he feels great relief were it only in imagination. Sometimes the phyſician has to remove ſome peculiarly dangerous ſymptom, before he can apply a general mode of cure. Sometimes the diſeaſed ſtate of ſome individual organ is ſo violent that the mitigation of it can prolong life. Sometimes the ſaving or at leaſt reſpiting life for a certain period depends on removing the moſt urgent affections. In malignant fevers, the art of the phyſician can, in this manner, avert death, by preventing the return of a new attack. Opium, cinchona, muſk, volatile ſalts, æther, and wine, are the moſt effectual remedies; alſo mental ſtimulants, by which the phyſician endeavours to carry the patient paſt the fatal period, and to ſuſpend lethargy or cramp. In this period courage muſt be united with prudence; but a diſtinction muſt be made between real and apparent vital debility. While the phyſician is endeavouring to remove the moſt urgent affections, the real cauſe of the diſeaſe will often manifeſt itſelf to his obſervation. But the phyſician can never be too much cautioned againſt the empiric mode of cure which is employed merely in removing the ſymptoms, and which, for each attack, has in readineſs a remedy. It is a moſt ſhameful degradation of the art; it bewilders our noſology with a number of diſeaſes which are nothing elſe than individual ſymptoms; aſſigns to each a particular mode of cure; collects uſeleſs ſpecifics, and de-

ceives by improper remedies, which indeed relieve at firſt individual affections, but leave the malady uncured, or rather prevent all poſſibility of a cure. By ſuch a method we deviate far from nature; though ſimplicity, according to the great Boerhaave, is the ſeal of truth.

The patient unacquainted with the eſſence of the healing art, requires, indeed, a palliation for each ſymptom, under an idea that the diſeaſe has its ſeat exactly in thoſe parts by which he ſuffers moſt. In vain does the phyſician endeavour to convince him that theſe individual ſymptoms are merely the conſequence of the general morbid ſtate, and that they will diſappear in proportion as art is able to remove the general diſeaſed ſtate; that the real phyſician muſt not cure according to ſymptoms, but according to the cauſes; and that in this manner only it is poſſible to afford real relief, or to cure any individual ſufferings. In ſuch caſes the phyſician may employ ſome harmleſs remedies for individual affections, in order to humour the patient, and give him a little conſolation.

But there are many diſeaſes where ſomething may and muſt be done in regard to individual affections, provided the phyſician poſſeſſes practical acuteneſs and proceeds with caution. Theſe palliatives may be employed with more certainty when one is acquainted with the cauſes and nature of the diſeaſe, ſo that the treatment may in every thing be agreeable to the general ſyſtem of healing; ſuch ſymptomatic remedies are required when an individual organ ſuffers in particular; but a great deal depends on the kind of medicine proper to be employed.

I ſhall

I ſhall here endeavour to gvie an account of the palliatives proper for being employed in a few of the moſt urgent caſes, and which, when no radical cure is poſſible, may afford ſome relief, and therefore contribute not a little towards procuring a reſpite for life.

§ 540.

PAIN.

Pain is either the conſequence of too great irritability, or of a want of ſufficient irritability. In the firſt caſe the pain is occaſioned by inflammation; in the ſecond it ariſes from a want of the neceſſary external excitement, a decreaſe of the uſual warmth.

In caſe the pain ariſes from an exceſs of irritation, reſt, ſtimulating a ſound organ to effect a derivation, and the application of local cooling anti-inflammatory remedies, are to be recommended.

We muſt here carefully diſtinguiſh whether this exceſs of irritability, which occaſions pain, takes place where there is actual vital ſtrength (complete ſthenia) or where there is vital debility (direct aſthenia). In the firſt caſe, the ſo called debilitating means, according to the nature of the circumſtances, bleeding and evacuants, are the only anodynes. In the latter, the means for leſſening irritation muſt be applied more locally. We may here employ alſo narcotics, which by their preponderating excitement ſuppreſs the exiſting irritability, and at the ſame time exalt the powers.

In caſe the pain ariſes from want of excitement, it may be mitigated by endeavouring to apply the neceſſary ſtimulants. Such for example as heat, reſt, nourihment; or habitual ſtimulants, as brandy to brandy-drinkers.

A deficiency of excitement may exiſt both where there is vital ſtrength, and where there is vital debility. In the firſt caſe, the pain will ſoon be allayed by applying the ſtimulants which are wanting; but in the ſecond, the method for reſtoring the deficient excitement muſt be longer continued, as on ſuſpending it, the return of the pain becomes more violent. The pain of hunger, where only indirect debility exiſts, where the vital principle has not been much weakened by the continuance of this ſtate, and before the organic parts are injured, will ſoon be allayed by the uſe of food. But in direct debility, where the vital principle has ſuffered, the organic parts, as is the caſe with the ſtomach from hunger, become injured; and therefore the application of food muſt be continued, gradually increaſing the quantity, to remove the debility, and allay the pain entirely.

In the caſe of direct debility, the exciting powers may be conſidered as the beſt anodynes: wine, opium, Hoffman's anodyne ſpirit, may be employed for that purpoſe.

The general method of allaying pain is by exciting a general activity of the ſyſtem to leſſen, and, as it were, diffuſe the irritability accumulated in individual organs. By theſe means the immoderate ſenſibility in the ſuffering parts decreaſes: we accompliſh this end,

(a) BY GENERAL MEANS, which in the aſthenic ſtate increaſe the activity of the vital principle, and in the ſthenic leſſen it. To the firſt caſe belong the tepid bath, wine, opiates, friction, bodily exerciſe: to the ſecond, the cold bath, detergents, bleeding.

(b) BY TOPICAL MEANS: In aſthenic pain, warm fomentations, ſtimulants, veſicatories, friction; in ſthenic pain, cold fomentations, topical bleeding.

(c) BY

(c) BY MEANS THAT PRODUCE A DERIVATION; exciting a greater activity in other organs in order to leſſen the irritability of that which ſuffers. This can be effected in a very high degree by increaſed activity of the organs of thought.—A moderate pain may be leſſened or allayed by diſtracting and varying the ideas, and by exhilarating the mind. But for allaying more violent pain, it will be neceſſary to excite fixed ideas, by which the ſenſation of the pain may be ſuppreſſed while the powers of the imagination are engroſſed with other objects. Thus heroes in the field of battle forget the moſt painful wounds. By exciting the activity of the organs of digeſtion, pain of the head and teeth is ſometimes palliatively moderated; as the moxa deſtroys the pain of the gout. The ſenſation of pain is leſſened alſo by great muſcular exertion, violent running, exerciſe, crying and lamentation.

From theſe obſervations on the treatment of pain, the phyſician may deduce rules for individual caſes. He muſt never loſe ſight of the diſeaſe in general, and attend merely to removing the pain, without taking into conſideration the cauſes. People, however, cannot be too much cautioned againſt the unconditional uſe of the ſo called anodyne remedies, and particularly opiates, in indirect debility. Even in ſmall doſes, they increaſe irritability; in larger doſes, they oppreſs the exiſting irritability, but they often occaſion congeſtions, rupture of the veſſels, lethargy, and apoplectic affections. When they are long uſed in caſes of returning pain, they occaſion great inſenſibility in regard to ſtimulants, and the utmoſt debility.

§ 541.

§ 541.

WAKEFULNESS.

This disagreeable symptom requires particular attention, when the general mode of cure cannot be applied to the disease, or though, when applied in the proper manner, it still continues as the consequence of too great irritability. The indication for removing this affection, is the same as that already given for removing pain.

Above all things, the causes of the want of sleep must be suppressed. They arise from the action of external things on the senses, uneasiness of mind, cramp, superabundance of blood, being kept too warm, costiveness. I shall not here repeat what I have said already on this subject, in another place. (§ 488.) The treatment of wakefulness depends on the general principles laid down in the preceding section. Soporifics, in general, are, bathing the feet, and bathing combined with friction; preserving the body open, by means of injections; the use of free air, moderate exercise, &c. In regard to opiates, they must be employed with great prudence. To determine the cases where they are applicable, would be tedious. In general, where there is great irritability, an inflammatory diathesis, and gastric impurities, they are hurtful. Sometimes they may be used with more effect, if applied externally. Friction on the region of the heart, with a mixture of a strong solution of emetic tartar and laudanum, may be employed.

§ 542.

§ 542.

LETHARGY.

The treatment of this affection must be regulated according to the causes. It may arise either from exhaustion of the powers, or from oppressed vital activity in individual organs; for example, accumulation of the blood in the brain, overloading the stomach. These impediments must be removed. In cases where impediments do not exist, and where there is rather direct debility, (real nervous weakness), animating, stimulating means may be employed, in order to restore the vital activity, as in the lethargic fever of old people. Wine, opiates *, cinchona, and camphor, are here in their proper place. Recourse must be had also to means which may effect a derivation: bathing the feet, friction, and vesicatories.

§ 543.

HEAT.

Without attempting to explain the theory of heat, we shall merely give an account of the general means for lessening it. Here also, in the accomplishment of our object, we must be guided by the causes and the general state, or the particular affections of individual organs. Bathing, refrigerants, combined with means for exciting perspiration, frequent drinking, and maintaining the body open, are in this case the means proper to be employed.

§ 544.

* Vogel's Handbuch, Part I. p. 159.

§ 544.

Immoderate Sweats.

First, to guard with great care against too much warmth, attention to the organ of the skin by cleanliness and bathing, exposure to cool but not cold air, and corroborants are the means to be employed. When the sweating is the consequence of exhaustion, we may use wine, mineral acids, and cinchona. But great care must be taken not to stop the sweating suddenly by cold, or to check it when it is critical.

§ 545.

Thirst.

In the treatment of this affection, a distinction must be made between the two cases: that where the vital principle is deficient, and that where it is merely oppressed. In the first case, as in putrid or in malignant fevers, immoderate thirst may be removed by corroborants, wine, mineral acids, opium, and the warm bath. In the second, by gentle evacuants, saltpetre, spiritus mindereri, and in general refrigerants that promote perspiration, vegetable acids, &c.

§ 546.

Vomiting.

Great care must be taken not to check vomiting, when it is an exertion of nature to free the body from foreign matter. In general, attention must be paid to the powers. It is only when violent vomiting is accompanied with direct debility, that we must endeavour

deavour to ſuppreſs it. This may be done by means which leſſen the irritability, and thoſe which exalt the too weak vital activity: wine, opium, calefacients, warm fomentations of wine or vinegar, the warm bath, veſicatories, or a decoction of muſtard or ginger, which will ſtimulate ſooner, applied to the region of the ſtomach. Sometimes vomiting ariſes from impurities in the ſtomach, in which caſe ſtimulating injections and detergents may be employed: if it proceeds from inflammation in the inteſtinal canal, as ſometimes happens, bleeding, or leeches applied to the region of the ſtomach, may be of ſervice.

§ 547.

DIARRHOEA.

Requires the like treatment as immoderate vomiting.

§ 548.

HÆMORRHAGE.

So far as it is ſymptomatic, mineral acids, opiates, bark, and ice-cold fomentations may be employed, according to the nature of the circumſtances; and, to produce a derivation, veſicatories, and bathing the feet. Opiates, in caſes of weakened vital activity, direct debility, deſerve to be particularly recommended *.

§ 549.

* Murſinna über der krankheiten der Schwangern gebärenden, &c. Vol. I. p. 119.

§ 549.

SHORTNESS OF BREATH.

If the cauſe be ſpaſmodic, narcotic medicines, opium, hyoſciamus, ipecachuana in ſmall doſes, and the warm bath may be employed: if there exiſts phlegm, reſolvents, juice of ſquills, gum ammoniac, and ſmall doſes of antimonials may be adminiſtered as palliatives. Sometimes the affections are mitigated by the ſteam of vinegar inhaled into the lungs, or the ſteam of warm water, when the former is too ſtimulating; but in particular, by a decoction of pounded malt, honey, vinegar, and water, the vapour of which muſt be inhaled into the lungs. When the aſthmatic attacks uſually come on in the night, ſuch medicines muſt be employed on going to bed, as preventatives. Both for relieving the fits, and as a preventative, friction of the hands and feet may be applied. Inſpiring artificial kinds of air may alſo be of uſe. During the paroxyſms, to bring the patient to a window, will afford ſome relief.

§ 550.

PAIN IN MAKING URINE.

Emollient injections, fomentations of milk or water, applied to the parts affected, the half-bath, milk and water, milk of almonds, emollient mucilaginous decoctions, uſed internally, will be of ſervice. The external means are friction, with a ſtrong tincture of cantharides and laudanum, with warm oily ſubſtances, and in particular, with oil of hyoſciamus.

Theſe means are employed alſo for ſuppreſſion of

urine; but the catheter muſt likewiſe be uſed without delaying too long.

§ 551.

Spasmodic affections.

Theſe ariſe from immoderate irritability in ſome of the organs, and may exiſt where the vital principle is merely oppreſſed, as well as where there is a deficiency of that principle. In the firſt caſe, evacuants, bleeding, the cold bath, and cold fomentations may be employed; in the ſecond, opiates, the tepid bath, veſicatories, and antiſpaſmodics. In general, we may uſe as palliatives, emollient, gentle, detergent injections, the tepid bath, and opiates, externally by friction, and internally by injections; the weaker narcotic means, camomile flowers, hyoſciamus, flowers of zinc, valerian, &c. muſk, caſtor. Great caution muſt be employed in regard to the internal uſe of opium. It can be admitted only in debility, properly ſo called, where there is an actual deficiency of the animating principle; but in this caſe, in ſufficiently ſtrong doſes.

Among the crampiſh affections, may be included ſneezing and the hiccup. I once knew an inſtance of ſneezing bringing on death. In ſuch caſes, fomentations of warm milk are recommended, and to ſnuff up ſtarch. For ſpaſmodic hiccup, doſes of opium, wine, and in particular flowers of zinc may be employed. If the cauſe be inflammation, veſicatories muſt be applied to the ſtomach, and ſoftening mucilaginous decoctions given internally.

FINIS.

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